fmCASES - please find some way to contribute: formatting, content, etc!
If you make a change, please COLOR it! (Unless formatting)
These are in order of the required cases.

1. 45 yo Female Annual Exam

c. Menopause – avg at 51. Smoking = earlier. Only 12 mos of no period. Perimenopause before – can still get pregnant. Can last from 2-8 years. Hot flashes, vaginal dryness, mood swings/depression, libido change. Call if close periods, heavy bleeding, periods last more than week. As estrogen decreases, protection against heart disease and osteoporosis wanes, take Ca++ and Vit D (1200-1500 mg Ca and 800 IU vit D)

d. Pap smears – 2 liquid based systems vs traditional pap smear bc can test for HPV if abnl. 2009 guidelines recommend cervical cancer screening at 21 every 2 years between 21-29 and 3 years between 30-65. Women immunocomp'd, HIVpos, hx of cervical intraepithelial neoplasia grade 2/3/cancer, or exposed to DES in utero (d/c'd in 1971) more often. Women 65-70 who have had 3+ normal pap tests in last 10 years can stop. Total hysterectomies for benign reasons can stop. (AOG recs) USPSTF recs are 21-65 with pap q3yrs, but if HPV and Pap are done, 30-65 q5yrs. Screening d/c'd in women >65 with adequate prior screening and not at high risk for cervical cancer.

i. Show low grade squamous epithel cells (LSIL), high grade squamous epithelial cells (HSIL), atypical glandular cells of undetermined significance (AGUS) or atypical squamous cells of undetermined significance (ASC-US, which is inconclusive requiring followup testing). ASC-US pap test triaged with HPV testing (Reflex HPV testing)

ii. Bethesda system – adequacy, pos/neg, interpretation

iii. Gardasil – 6,11,16,18; Cervarix: 16,18,31,45

e. Mammogram – Until recently, started at 40 yo for average risk. Now, USPSTF recs no routine mammography 40-49 yo, but biennial screening 50-74. No upper age limit according to ACS. No screening under 40 unless BRCA, etc.

f. Self breast exams – most don't do it, doesn't reduce mortality, increases # bx, not recommended by USPSTF, clinical breast exam should be every 3 years for 20yos, every year over 40, patients who choose should be trained

g. Obesity – over BMI 30, overweight 25-29, also use waist circumference. Losing 5-10% body weight can reduce risk of diabetes, HTN, CVD.

h. Clinical breast exam – look for symmetry, skin changes, erythema, retractions/dimpling, nipple changes. Palpation with hand behind head, use 3 fingers, vertical strip search pattern, use light/med/deep palpation, palpate axillary and supraclavicular LNs

i. Cervical cancer – risks are early sex, multiple partners, cigs, immunosuppression

j. Screen for malignant melanoma. Screen for endometrial cancer at time of menopause – report bleeding or spotting. For those with/high risk for HNPCC – screen with endometrial bx at 35yo

k. Breast lump – hx, how long there, nipple discharge, change in size/during menstrual cycle, exam – single hard immobile > 2 cm with irregular borders prob bad. Cystic = aspirate, then cytology. Solid, then mammogram

l. Nipple discharge – physiologic (pregnancy, excessive stim) or pathologic (PRLnoma, breast cancer (intraductal papilloma, mammary duct ectasia, Paget's, DCIS), hormone imbalance, injury/trauma, abscess, meds (antidepressants/psychotics/hypertensives, opiates)

m. Breast cancer risks: first degree relative, genetics, prolonged estrogen exposure (menarche < 12 yo or menopause>45 yo), obesity, EtOH, age. Early pregnancy/high parity is protective. Use GAIL criteria for mammography

n. Immunizations: Tdap 19-64 who haven't had one

o. Osteoporosis – spinal or hip bone mineral density of 2.5 st dev below mean for healthy young women (T-score of -2.5) measured by dual energy xray absorptiometry (DEXA). Osteopenia is spinal/hip BMD between 1-2.5 st dev (T score -1—2.5). No screening before 60 yo. USPSTF recommends DEXA in 65+, and 60-64 with fxr risk. Risks: early menopause, sedentary lifestyle, hx of previous fxr as adult, prolonged premenopausal amenorrhea, low weight/BMI, inadequate Ca++, fam hx, cigarettes. Obesity is associated with high estrogen level and can be protective. White race is a risk. Taking hormone replacement therapy (HRT): estrogen without progestin can overstim endometrial tissue, leading to hyperplasia, leading to endometrial cancer. Progestin counteracts, so prescribed together. Progestin alone fine. HRT has risks of breast cancer, heart disease, blood clots, stroke

p. Transtheoretical model for change (smoking): precontemplation, contemplation, preparation, action, maintenance, relapse

q. Smoking cessation counseling

r. Lipid and fasting glucose – cholesterol screening at 20yo, repeated every 5 years. ADA recs for testing for diabetes in all adults with BMI > 25 + risks. Without risks, begin at 45 yo. USPSTF doesn't rec, but rec screening in HTN. Risks for diabetes: > 45 yo, overweight, fam hx, sedentary, high risk ethnicity, hx of delivering baby > 9 lbs or gestational diabetes, HTN, dyslipidemia (HDL < 35, TG > 250), impaired gluose tolerance, PCOS, vascular disease)

i. Screening: fasting plasma glucose, 2hour glucose during oral glucose tolerance test, or HBA1C (glycosylated Hgb). 6.5% is cutoff, confirm with repeat.

ii. Dx: HBA1C>6.5%, 2 fasting plasma glucose values over 125, 2 hr plasma glucose over 200 during oral tolerance test, random glucose > 200 + sxs of diabetes

2. Male annual exam 55yo

a. RISE: Risk factors, Immunizations, Screening tests, Education

b. CV: sedentary, cigs, EtOH, stress, diet, obesity, fam hx, claudication, age, male, HTN, hyperlipidemia, diabetes

c. Domestic violence: SAFE: Stress/Safety (feel safe?); Afraid/Abused (threatened, hurt, afraid?); Friends/Family (aware? Support?); Emergency plan (safe place to go, resources?)

d. 5As of counseling: Ask/Address behavior, Assess interest, Advise, Assist, Arrange for f/u

e. Smoking cessation: buproprion, varenicline: somewhat effective (1.5-3x placebo quit rate)

f. EtOH: CAGE: Have you ever felt the need to Cut down drinking? Felt Annoyed by criticism of your drinking? Had Guilty feelings about drinking? Taken a morning Eye opener?

i. EtOH can cause some protection against heart disease, small incr in HDL

ii. No more than 1 drink/day for women, 2/day for men

g. Nutrition: 24 hr dietary recall, dining out habits, fruits/vegetables

i. WAVE: Weight, Activity, Variety, Excess

ii. Food frequency questionnaire: Rapid Eating and Activity assessment for Patients (REAP)

iii. Food log, usual diet history, observed intake, weighed intake

h. BMI- risk for DM2, dyslipidemia, HTN, CVD. Also metabolic syndrome = abdominal obesity, dyslipidemia, HTN, insulin resistance +/- impaired glucose tolerance

i. Corneal arcus/arcus senilis (ring around eye?), xanthelesmas, acanthosis nigricans, decreased peripheral pulses: changes with dyslipidemia, atherosclerosis

j. ABCDE – asymmetry, border irregularity, color, diameter > 6mm, evolution/change

k. Addiction: Compulsion, lack of Control, Continued use despite adverse consequences

l. Immunizations: Tdap for 11-64, zoster at 60

m. Depression: felt down, depressed, hopeless? Felt little interest or pleasure in doing things?

n. PSA: USPSTF: no PSA screening. ACS: discussion of potential benefits and harms of screening

o. Colonoscopy, annual testing of 3 stools for blood and flex sig q 5yrs, double contrast enemas q5 yrs

p. Cardiac ischemia: ST depression, downsloping ST, convex ST elevation is acute MI, Q waves are infarct, short PR is arrhythmias: WPW, AV junctional rhythm with retrograde P conduction, Lown-Ganong-Levine

6. Diabetes

a. Need to know age of onset, characteristics of onset, prior tx, nutrition hx, exercise, hyper/hypoglycemic episodes, micro/macrovascular complications, psychosocial probs, dental dz

b. DM2: insulin resistance, beta cell dysfunction. Weight loss and exercise improve insulin resistance. DM1: pancreas dmgd, beta cells don't produce enough insulin. High blood glucose eventually affects blood vessels and organs…heart, brain, kidneys, eyes, nerves

c. Type 1: DKA. "Insulin dependent". Type 2 can develop it over time, but more often develop hyperglycemic hyperosmolar state

i. HHS: dehydration, high glucose > 600, absent ketones, life-threatening. Triggered by infxn (PNA, UTI), decreased fluid intake

d. LEARN model for assessing patient understanding of dz

e. Dx for DM2: classic sxs: random glucose > 200. Fasting glucose > 126. HBA1C>6.5%. Oral glucose tolerance test – more sensitive and more specific than fasting glucose

f. Risks: Overweight, obesity + 2 of: sedentary, race, first degree relative, HTN, HDL < 35 or TG > 250…else screen at 45 yo q 3yrs

g. Pre-diabetes – fasting glucose 100 < x < 125, 2-hr plasma glucose 140-199. Intensive lifestyle mod is best

h. Retinopathy: retinal hemorrhages, cotton wool spots, microaneurysms. Proliferative: neovascularization

i. Thyroid diseases can lead to diabetes and hyperlipidemia

j. Foot exam: Test for sensation, ankle reflexes, pedal pulses, hair loss, temperature changes (vascular insufficiency), breaks in skin, bony abnlties

k. Test: B12 (metformin can reduce B12 levels), spot urine albumin creatinine ratio (test for microalbuminuria), TSH (in T1DM, newly dx dyslipidemia, women > 50), fasting lipid profile, serum creatinine

l. Mgmt: quit smoking, lower BP < 140/90 (ACE/ARB), LDL lowering with statins, lifestyle mod, A1C% < 7% prevents microvascular disease (retinopathy and nephropathy)

m. Dx > 6.5%: lifestyle mod + metformin. If > 8, lifestyle + metformin + sulfonylurea (glyburide/glipizide/glimepiride) or basal insulin (glargine/detemir) on intermediate acting insulin (NPH). If still high, continue lifestyle changes and metformin + add basal insulin or intensify regimen. Consider d/cing sulfonylurea to avoid hypoglycemia

n. Should get pneumococcal vaccine > 2 years old and booster over 64, nephrotic syndrome, etc

o. See dentist regularly

p. Optho: T1: first annual eye exam 5 years after dx, but T2 when dx because 20% will already have retinopathy

7. HTN

a. Start screening at 18

b. Ask about end organ disease, CV risks, smoking, meds

c. Measure in each arm (in case coarctation – high in right but low on left = secondary HTN)

d. Essential hypertension: chronically higher BP with no identifiable cause

e. Secondary HTN: OSA, CKD, renovascular causes, drugs, pheo, primary aldosteronism, steroids,

Cushing's, thyroid/parathyroid disease, coarctation

f. Need at least 2 elevated measurements, one in each arm, 5 min apart on 2 sep occasions

g. Hypertensive retinopathy

h. White coat hypertension – only when see doctor. Should still receive surveillance for development of essential hypertension

i. Stages of HTN: PrehyperTN, Stage 1 (140-160/90-100), stage 2 (>160/>100)

j. Stage 1 – thiazide + lifestyle mods. Stage 2: thiazide + ACE/ARB or BB/CCB

Compelling Indications for Individua Drug Classes		
Compelling Indication	**Initial Therapy Options**	**Clinical Trial Basis**
Heart failure	Thiazides, Beta Blockers, ACE Inhibitors, ARBs, Aldosterone Antagonists	ACC/AHA Heart Failure Guideline, MERIT-HF, COPERNICUS, CIBIS, SOLVD, AIRE, TRACE, ValHEFT, RALES
Postmyocardial infarction	Beta Blockers, ACE Inhibitors, Aldosterone Antagonists	ACC/AHA Post-MI Guideline, BHAT, SAVE, Capricorn, EPHESUS
High CAD risk	Thiazides, Beta Blockers, ACE Inhibitors, Calcium Channel Blockers	ALLHAT, HOPE, ANBP2, LIFE, CONVINCE
Diabetes	Thiazides, Beta Blockers, ACE Inhibitors, ARBs, Calcium Channel Blockers	NKF-ADA Guideline, UKPDS, ALLHAT
Chronic kidney disease	ACE Inhibitors, ARBs	NKF Guideline, Captopril Trial, RENAAL, IDNT, REIN, AASK
Recurrent stroke prevention	Thiazides, ACE Inhibitors	PROGRESS

k. HCTZ: may affect lytes and cause hypoNa+, avoid in gout, cause elderly to become incontinent

l. DASH diet, Na+ restriction, exercise, weight reduction

m. ATPIII – risk of atherosclerotic disease for CHD risk equivalent at 10 years

n. Hypercholesterolemia

8. SIMPLE – OVERWEIGHT

a. BMI

b. Wt history – begin in childhood, fam hx, prior attempts at wt loss, barriers in attempts, diet, physical activity, EtOH, smoking, substance abuse (marijuana is appetite stimulant), psychosocial stress, meds (GCs, TCAs, SSRIs, antipsychotics, antiepileptics)

i. Wt gain of 5+ kg after 18 in women and 20 in men incr risk of coronary heart disease, T2DM

ii. Cushings, hypothyroid, hypogonadism, sleep apnea, CAD, cerebrovascular dz, PVD

iii. Risks: hypercholesterolemia (lipid laden histiocytes = xanthelesma, xanthomas on extensor tendons), HTN, PVD, carotid bruits, increased waist circumference

iv. Obesity increases insulin resistance, LDL, VLDL, TGs. Decreases HDL. Can lead to DM2, HTN, dyslipidemia, heart dz, stroke, PVD, CHF, afib, back pain, DJD…

v. BMI > 40 incr risk NHL, multiple myeloma, cancers of esophagus, colon, rectum, liver,

gallbladder, pancreas, stomach, kidney, prostate, breast, uterus, cervix, ovary.

1. @women: irregular menses, anovulation, infertility

c. Metabolic syndrome: fasting plasma glucose > 100 (or on meds for hyperglycemia), BP > 130/85 (or on HTN drugs), TGs > 150 (or on meds), HDL < 40 for men < 50 for women (or on drugs), abdominal obesity (waist > 40 men, > 35 women). Tx: lifestyle mod. Higher risk of DM, fatty liver, HCC, cholangiocarcinoma, CKD, OSA, hyperuricemia, gout

d. Get lipid profile, fasting glucose. Screen cholesterol every 5 years after 20 yo. Strong correlation between total and LDL and CHD

e. Incr risk of HTN, hypercholesterolemia, DM, CVD, stroke, arthritis, cancer

f. 5 risks for CHD – cigs, HTN, low HDL, fam hx of premature heart dz, age

g. Look up bile acid sequestrants, nicotinic acid, fibric acid derivatives, ezetimibe, fish oil supplements

i. Sfx of statins: hepatic dysfunc, myopathy

ii. Lifestyle: reduce saturated fat in diet, increase dietary fiber, increase phys activity, weight loss

iii. Exercise, weight loss, smoking cessation, and alcohol in moderation can incr HDL

h. Dyslipidemias

i. Familial (polygenic hypercholesterolemia, heterozygous familial hypercholesterolemia, familial combined hyperlipidemia, dysbetalipoproteinemia)

ii. DM2, cholestatic/obstructive hepatic dz, nephrotic syndrome, hypothyroid, acute hepatitis, EtOH, thiazide/BB, oral estrogens/protease inhibitors

i. Daily calories: basal metabolic rate + additional calories for activity (BMR = body weight in lbs x 10, additional calories = multiply body weight in lbs by specific factor)

j. 3500 calorie deficit to lose 1 lb body weight

k. TLC diet = low saturated fat

l. Orlistat, phentermine, bariatric surgery

9. 68 yo SKIN LESION

a. Primary skin lesion – uncomplicated representing initial pathologic change

i. Macule, patch, papule, plaque, nodule, tumor, vesicle, bulla, pustule, wheal

b. Secondary skin lesions – occur as consequence of progression, trauma, infection

c. Psoriasis – bilateral, extensor surfaces of elbows and knees, scaly and elevated

d. Lichen planus – middle age, 2-10mm flat topped papule with irregular angulated border (polygonal papules) at flexor surface of wrists and on legs above ankles. Multiple lesions

e. Seborrheic Keratoses – elevated hyperpigmented on face and trunk, well-circumscribed, stuck on appearance, variable tan-brown-black color

f. Basal cell carcinoma – waxy, ulceration, telangiectasia, face, slow growing with rare mets

g. Actinic keratosis – scaly

h. SCC – scaly, thick, pink maculopapular, ulcerations, irregular, friable, fleshy, 20% of all skin cancers

i. Melanoma –

j. Eczema – ears, flexure areas

k. Drugs

i. Creams for exudative inflammation, ointment for potency and dry skin, lotion/gel for oozing, scalp, exudative inflammation

ii. Corticosteroids – can induce vasoconstriction to small blood vessels @ upper dermis

iii. Strongest to weakest: Betamethasone/halobetasol – desoximetasone/flucinonide – betamethasone/tramcinolone – floucinolone – alclometasone/desonide – hydrocortisone

1. Most common sfx – skin atrophy, hypopigmentation

l. Tinea capitis – oral therapy (penetrate hair shaft) – griseofulvin only oral antifungal

m. Tinea unguium (onychomycosis) – terbinafine for 12 weeks (toenails) or 6 for fingernails, itraconazole 2x daily as pulse therapy
n. Tinea pedis – burning and redness (athletes foot) – wet, friction, warmth, diabetes, steroids, chemo, HIV/AIDS
o. Incisional biopsy, punch biopsy
p. SCC in situ – Bowen's disease
    i. Risk for recurrence and mets: > 2cm, ear/lip, radiation hx, prev tx, locally recurrent, immunocomp'd, rapid growth, > 4 mm depth, poorly differentiated, perineural invasion
    ii. Surgical excision – 4 mm margin for 95% cure rate
q. 5-FU – for tx of actinic keratoses
r. Prostatitis – younger men, pain, bladder irritation, bladder obstruction, blood in semen
s. BPH – lower urinary tract sx (frequency, nocturia, etc), DRE, UA, PSA, BUN/Cr (obstructive nephropathy)
    i. Start with behavior modifications to decrease sxs (don't drink before bed, don't take decongestants, don't take antihistamines), alpha reductase inhibitor (finasteride, dutasteride), start with alpha adrenergic antagonist (tamsulosin, alfuzosin, terazosin, doxazosin)

10. 58 yo M SOB

a. Dyspnea – CHF, CAD, dysrhythmia, pericarditis, acute MI, anemia, COPD, asthma, PNA, PTX, PE, pleural effusion, lung cancer, pulmonary edema, GERD, aspiration, restrictive lung dz, panic attacks (paresthesia, choking, nausea, CP, derealization, trembling, dizzy, palps, sweating, chills, flushes), hyperventilation, exposures, allergies, deconditioning with lack of exercise
b. Bronchitis – cough, SOB 2-3 weeks
    i. Chronic (vs. acute) – long-term inflammation that can lead to structural changes, productive cough for at least 3 mos for the past two years
    ii. Bronchiectasis – recurrent or persistent PNAs
    iii. COPD – increased AP chest, decreased diaphragmatic excursion, wheezing, prolonged expiratory phase, laryngeal height
        1. Dx: PFTs: FEV1/FVC less than 5th percentile, or less than 70%
    iv. CHF – S3 from decreased compliance in left ventricle
c. PFTs
    i. FEV1 – amount of air patient can expel after full breath in 1 sec
    ii. FVC – amount of air pt can expel from lungs total
    iii. COPD causes air to be exhaled at slower rate and smaller amount (obstructive)
d. COPD – chronic bronchitis and emphysema, not fully reversible with bronchodilators (asthma is reversible with bronchodilators) – collect PFTs with and without bronchodilators. Reversibility is >= 12%. Involves cigarette smoke, macs, T killer cells, neutrophils. USE ANTICHOLINERGICS (ipratropium/tiatropium). Mild, moderate, severe, very severe. FEV1: FVC < 0.7, and cutoffs for FEV1 are 80,50,30%
    i. Give albuterol MDI
    ii. Others: SABA, LABA, long acting anticholinergics, oral methylxanthines
    iii. Can be caused by A1AT def in younger pts
    iv. Smoking decreased lung function 2x faster than those who quit
    v. Mild – SABA/LABA; moderate – anticholinergic + ; severe – inhaled GC
    vi. PPx: give flu, pneumo, TdaP, and zoster vaccines
    vii. Give abx to those with exacerbations with increase dyspnea/sputum/purulence, or requires mechanical ventilation
    viii. Exacerbation – change in baseline and acute. Tx with inhaled bronchodilators and GCs

ix. Complications: CHF – chronic hypoxia causes vasoconstriction which increases pulmonary BP, leading to HTN, leading to RHF – cor pulmonale

e. Asthma – sxs at night or early morning, related to rhinitis, allergy, eczema, mast cells/Th cells/eosinophils

11. 66 yo SOB

a. CAD – poorly controlled DM, HTN, old
b. To slow CAD progression: ACEI, aspirin, BP < 130/80 for diabetics, LDL < 70, add beta blocker even if BP normal
c. Metformin doesn't cause weight gain, but using insulin with it mitigates this. ACE is renal protective in diabetes, thiazide is synergistic with it
d. Chronic uncontrolled HTN can lead to diastolic dysfunction
e. Hypothyroid – CHF – heart doesn't relax, weakened, diastolic dysfunction, decrease in NO, increased LDL and myxedema (non pitting edema)
f. EKG for LVH with strain – ST depression with T wave inversions in the lateral precordial leads
g. CHF – cardiomegaly, central vascular congestion and hilar fullness, pleural effusions, cephalization of pulmonary vasculature, Kerley B lines (interstitial fluid in lung tissue)
h. Diastolic heart failure – EF > 45% with sxs (HFPEF) – better prognosis, common in women, increases with age, HTN can cause
i. Systolic HF – ACE, ARG, dig, loop diuretics, metop tartrate
j. Stress tests
k. Excess diuresis and preload reduction can worsen diastolic HT

12. 19 yo F sports injury

a. Pt who seeks help immediately and is non weight bearing more likely to have severe injury
b. Hx of previous sprains is risk factors for ankle injury
c. R/o compartment syndrome (P's)
d. Anterior inferious tibiofibular ligament, anterior talofibular ligament, posterior inferior tibiofibular ligament, posterior talofibular ligament, calcaneofibular ligament
e. Inversion injury
f. Acute ankle injury – 20% of all sports injuries in US. Medial ankle sprains are rare/forced eversion. Syndesmotic injury involves interosseous membrane and anterior inferior tibiofibular ligament. Positive ankle squeeze. Fracture of tibia follows high velocity trauma
g. Ankle sprain – combo of plantar flexion and inversion. Lateral stabilizing ligaments (anterior talofibular, calcaneofibular, and posterior talofibular ligaments) are most often damaged. Anterior talofibular most easily injured
h. Anterior drawer test assesses integrity of anteriortalofibular ligament, inversion stress test assesses integrity of calcaneofibular ligament
i. Medial stability from deltoid ligament, anterior tibiofibular ligament, and bony mortise
j. Grading severity: ligament tear, loss of fxn, pain, swelling, ecchymosis. Grade I – small tear. Grade II – incomplete tear, functional impairment. Grade III – complete tear, loss of integrity, severe swelling, bruise
k. Ottawa rules – If pain in malleolar zone AND either bony tenderness along distal 6 cm of posterior edge of either malleolus OR inability to weight bear 4 steps both immediately after the injury and in office = need radiograph.
l. Put lower leg on opp knee. Press on inner part of crossed knee (crossed-leg test, detects high ankle sprains/syndesmotic injury between tibia and fibula)
m. RICE (rest ice compression elevation) Rest first 72 hours after sprain, stretching after first few days,

ice several times day for 10 min or so each, keep elevated. NSAIDs. Use semirigid support (aircast) for compression.

n. UTI – see pos leuk esterase and nitrites. But in young woman can treat if symptoms and no concern for upper tract infxn. Use bactrim or cipro

13. 45 yo M with lumbago

a. 5th most common reason for all doctors visits. Lifetime prevalence is 60-80%. 100B in direct/indirect costs. Most LBP resolves in 2-4 weeks

b. CTMINDandV – congenital, traumatic, metabolic, infectious, inflammatory, neoplastic, degenerative, vascular, visceral

c. 3 most common causes – lumbar strain, disc herniation, DJD

d. Exam: check for lordosis, kyphosis, scoliosis. Palpate. ROM. Gait – walk on heels (L5) and toes (S1). Stand to squat position (squatting reduces pain of central spinal stenosis)

e. Modified straight leg raise – if pain is functional, action is possible without difficulty. If structural, patient will tripod backwards

f. Impingement:

i. L3 – decreased patellar tendon reflex, pain in the lateral thigh and medial femoral condyle, trouble with extension of the quadriceps, squat down and rise

ii. L4 - Trouble with dorsiflexing ankles and walking on heels

iii. L5 - Decreased medial hamstring reflex; pain in the lateral leg and dorsum of the foot; trouble with dorsiflexion of the great toe and walking on heels

iv. S1 - Decreased Achilles tendon reflex; pain in the posterior calf; sole of the foot and lateral ankle; trouble with standing on toes and walking on toes (plantarflex ankle)

g. Supine – abdominal exam, listen for bruit, passive straight leg raise – if less than 80 deg, have tight hamstring or sciatic nerve problem. To differentiate, raise leg to point of pain, lower slightly, then dorsiflex the foot – if no pain with dorsiflexion, hamstrings are tight. Positive if pain radiates down posterolateral thigh past knee. FABER test (flexion abduction external rotation) – pathology of hip or sacrum (sacroiliitis)

h. Disc herniation – pain worse with sitting, drop foot, pain worse with cough and sneezing

i. Red flags: cancer, infection, cauda equina syndrome, foot drop, vertebral fxr

j. Certains tests: CBC, Xray, Lumbar spine film, MRI. After 4-6 weeks of conservative tx, plain radiograph is often first imaging because inexpensive and easily accessible

k. For radiculopathy – NSAID, muscle relaxant, moist heat. +/- PT

l. Most improved in 4-6 weeks, longer recovery associated with older pts, recurrence rate varies 35-75%

14. 75 y F with knee pain

a. NSAIDs can worsen GERD sxs esp on an empty stomach

b. Lachman's – assesses stability of anterior cruciate ligament. Positive anterior drawer sign is indicative of anterior cruciate ligament injury. Valgus stress test assesses the medial collateral ligament. Varus stress test tests lateral collateral ligament. McMurray test assesses medial and lateral menisci

c. Patellofemoral pain syndrome – anterior knee pain, overuse injury, theater sign – pain after prolonged sitting

d. Iliotibial band tendonitis – lateral knee pain, overuse injury

e. ACL sprain – general knee pain, deceleration forces, swelling within hours of pop

f. MCL sprain – medial pain, misstep/collision, immediate pain

g. LCL sprain – lateral pain, varus stress, immediate pain

h. Meniscal tear – medial/lateral knee pain, sudden twisting injury, can occur with chronic degen process
i. Septic arthritis – generalized pain with any mvmt, arthrocentesis with turbid fluid
j. Osteoarthritis – generalized pain, relieved with rest, elevated WBC and ESR, crepitus
    i. See subchondral cysts, osteophytes, subchondral sclerosis
    ii. Acetominophen is first line for short and long-term treatment of mild to moderate pain related to OA
    iii. Exercise
k. Gout/pseudogout – TTP
l. Popliteal/Baker's cyst – pain at posterior popliteal area, insidious onset of pain
m. Carpal tunnel syndrome – Tinel/Phalen's test, nocturnal wrist splint for a month
n. For 74 y o F – screen for HTN, depression, mammogram, and colorectal cancer

15. 38 yo M with Shoulder Pain

a. Posterior dislocation – pt carries arm in adducted and internally rotated – seizures, trauma
b. Poor posture can lead to painful impingement syndrome
c. Bony deformity – at clavicle or acromioclavicular joint is fxr of clavicle or sprain of AC joint
d. Fullness of anterior shoulder with large dimple in posterior should often indicates anterior dislocation
e. Atrophy of larger muscles = unused
f. Atrophy of smaller muscles = torn rotator cuff or nerve impingement
g. Palpate sternoclavicular joint, coracoid process, greater and lesser tuberosity and bicipital groove
h. ROM – active and passive
i. Also test cervical spine
j. Apley scratch test
k. Active and passive ROM = adhesive capsulitis (contracture of joint capsule more common in diabetic or s/p injury or stroke), glenohumeral arthritis. More likely to have joint disease
l. Only active ROM – muscle tissue
m. Empty can/Jobes test –
n. Know rotator cuff muscles and functions – SITS
o. Neer test – tests for supraspinatous tendon, long head of biceps muscle, subacromial bursa
p. Hawkins-Kennedy test - more specific
q. Sulcus sign
r. Shoulder mostly dislocates anteriorly – pt carries arm abducted and externally rotated
s. Shoulder stabilizers – labrum, rotator muscles, glenohumeral ligaments
t. Test for biceps tendinopathy: Speed's test, Yergason's tests – pain in anterior shoulder is positive
u. Tendinitis = inflammatory etiology, acute; tendinopathy = chronic degenerative pathology with fibroblastic response, lack of acute phase reactants and collagenous degeneration
v. Labrum test – O'Brien test – looks for superior labral tear (SLAP lesion); clunk test

16. 42 yo M RUQ pain

a. EtOH drinking
b. Risky/hazardous = >4 drinks per occasion. Physical/social/psych harm then would be problem drinking. EtOH abuse is maladaptive pattern with failure to finish work/school/social obligations, recurrent abuse in hazardous situations, legal problems, continued use. Dependence = 3+ of the following: tolerance, WD, drinking more than intended, persistent desire to cut down, sacrificing other tasks
c. Higher relapse rates in men, younger, fewer social supports, drink more prior to treatment, poor

compliance with drug therapy

17. 55 yo F with postmenopausal bleeding

a. Menopause = 12 mos without a cycle
b. Median age of 52 years, between 40-58 for most women. Sxs: hot flashes, vasomotor symptoms, atrophic vaginitis, dyspareunia
c. Hormonal therapy: decreases vasomotor sxs, atrophic vaginitis sxs, osteoporosis risk
d. Systemic estrogen most effective for hot flashes/vasomotor (systemic), atrophic vaginitis (topical). Need progesterone if still have uterus to prevent endometrial cancer with unopposed estrogen.
e. Combined E/P tx beyond three years increases breast cancer risk, unopposed estrogen increases endometrial cancer risk, beginning HT after 60 yo increases risk of CAD, increases risk of stroke for 1-2 years after starting
f. Women in 50s: colonoscopy, mammography, pap smear
g. Mammography biennial for all women 50-74 (USPSTF). ACOG/ACS recs are at 40.
h. Colon cancer 50-75 yo.
i. Pap smears – age 21 and q3years until 30 yo. From 30-65, do HPV testing with Pap every 5 years. Screening 30-65 yos with cytology alone q3years is okay too
j. Osteoporosis – screening for all women >65 yo and in younger women with fracture risks. FRAX score calculates risk of fracture. Risks: family hx, CS use, previous fxr, smoking, EtOH, low body weight, white. Prevention: Calcium 1200 mg/day, Vit D 800 IU/day, weight bearing exercise, smoking cessation
    i. Fxrs most common @ vertebrae, hip, distal radius, proximal humerus. Mortality for hip fxrs 20-25%. Fall prevention. Check vision, hearing, neuro, balance
    ii. DEXA – gives T score. -1 to -2.5 is osteopenia. Less than -2.5 is osteoporosis
    iii. Tx: Bisphosphonates (Alendronate, Fosamax) inhibit bone resorption and reduce bone turnover. Decreases risk of vertebral and non vertebral fxrs
    iv. PTH (forteo) reduces risk of fxr by 50-65%. No data beyond 2 years
    v. ERT – fxr risk reduction 20-34%, short term tx
    vi. Calcitonin – reduces vertebral fxr, not hip or other
k. Cervical polyps – most common in postpartum and perimenopausal women.
l. Endometrial hyperplasia – with or without atypia. Simple hyperplasia progresses to cancer in less than 5% of patients. Atypical complex hyperplasia is premalignant with 25% probability of progressing to cancer
m. Hormone-producing ovarian tumors –
n. Endometrial cancer – fourth most common cancer in women and is THE MAIN diagnosis that must be considered in woman presenting with postmenopausal bleeding
o. Proliferative endometrium – normal response to estrogen
p. Other causes – meds, anticoagulants, SSRIs, antipsychotics, corticosteroids, hormonal meds
q. Dysfunctional uterine bleeding – can be caused by thyroid disease
r. Atrophic vaginitis – walls become smooth, os shrinks
s. Urinary sxs – UTIs, frequency, dysuria
t. Risks for endometrial cancer – unopposed estrogen, tamoxifen, obesity, anovulatory cycles, estrogen secreting neoplasms, early menarche, late menopause, menstrual irregularities, nulliparity. Smoking is not a risk factor. Also hx of breast/colon cancer, thyroid disease, HTN, diabetes are risks
u. Tests: Transvag US – if less than 4 mm, reassuring. Good for detecting masses, ovarian pathology, endometrial probs; endometrial bx; D&C with Pipelle device, causes cramping, recommend 800 mg ibuprofen before; CBC; TSH level

v. Elevated FSH levels from decreases inhibin synthesis from ovarian granulosa cells can detect menopause
w. Hot flashes – alternative treatments to ERT are: soy and black cohosh, paroxetine and venlafaxine, regular exercise, clonidine and gabapentin

18. 24 yo with HA

a. Brain tumor doesn't cause headache unless involves dura mater
b. Migraine, tension type, cluster, secondary headaches
c. Migraine – moderate to severe pain, nausea, vomiting, photo/phonophobia, aura, aggravated by physical activity, last 4-72 hours. 5 episodes needed for dx
d. Tension – can have occipital tenderness, last 30 min to 7 days, need 10 episodes to dx tension HA
e. Cluster – 5 episodes severe unilateral orbital, supraorbital, or temporal pain lasting 15-180 min associated with autonomic features like rhinorrhea, lacrimation, miosis, ptosis, conjunctival injection
f. Anxiety/depression HA – sim to tension type
g. Meds – analgesic rebound HA. > 15 Has/month, overuse of analgesic for > 3 months. Stop meds.
h. Anxiety – PHQ-9/2, GAD7/2
i. Neuroimaging if migraines with atypical HA pattenrs or neuro signs, higher risk of abnlity, results would alter mgmt
j. Symptoms that increase odds of positive neuroimaging: rapidly increasing freq, abrupt onset, marked change in HA pattern, history of poor coordination, focal sxs, HA wakes up, persistent following head trauma, worse with Valsalva, new onset > 35 yo, hx of cancer or HIV
k. HA triggers: sleep probs, emotional stress, caffeine, aspartame/phenylalanine, exercise, fruit smoothies, menses, pregnancy, illness, fasting, bright lights, progesterone, tobacco/EtOH, cheeses/meats/pickled foods, MSG, chocolate, etc
l. Migraines:
    i. Triptans
    ii. Ergot alkaloids
    iii. Aspirin/butalbital/caffeine
    iv. Acetaminophen/"/"
    v. "/dichloralphenazone
    vi. "/aspirin/caffeine (Excedrin)
m. SSRI + sumatriptan can cause serotonin syndrome
n. PPX: propanalol, divalproex, topiramate, gabapentin, amitryptaline, verapamil, Mg, Vitamin B2

19. 17 yo M with groin pain

a. Home
b. Education/Employment
c. Eating
d. Activities
e. Drugs
f. Sex
g. Suicide/Depression
h. Safety/Violence
i. Unilateral scrotal pain: testicular torsion, trauma, epididymitis (physical elevation of testicle relieves pain; Prehn's sign), torsion of appendages (see blue dot sign), varicocele (mildly tender sometimes)
j. Henoch-Schonlein purpura – nonthrombocytopenic purpura, arthralgia, renal dz, abd pain, GI bleed, occasional scrotal pain

k. Hydrocele – painless fluid collection, pulling/dragging sensation
l. Varicocele – collection of dilated/tortuous veins in pampiniform plexus surrounding spermatic cord, Left sided more commonly because left spermatic vein enters left renal vein at 90 degree angle. Dull ache, fullness
m. Tumor – also enlarged testicle, but not painful
n. Torsion – 1/4000 boys < 25 yo each year, risks: congenital anomaly (bell clapper deformity, undescended testicle, trauma, exercise
o. If dx in question, use Doppler US – torsed intratesticular blood flow is either decreased or absent (decr echogenicity), can do radionuclide scintigraphy but more expensive and slower
p. Complication – loss of testis, which can lead to impaired fertility. Causes: delay in medical attention, incorrect dx, delay in treatment
q. Manual detorsion may be attempted but surgery (orchiopexy) still required. Bilateral because risk of recurrence at other side is high
r. Postop – wear support/ice until pain-free, repeat Doppler q6mos until stable, measure antisperm antibodies
s. Patient centered Medical Home
    i. Personal physician
    ii. Physician directed medical practice
    iii. Whole person orientation
    iv. Care is coordinated/integrated
    v. Other: open scheduling, expanded hours, communication
t. Guidelines for Adolescent Preventative Services (GAPS) – preventing HTN/HL, promoting safety and injury prevention, promoting physical fitness, healthy diet, preventing infxn/abuse/learning probs/drugs/depression
u. Screening for sexually active adolescents – Chlamydia, N gonorrhea, HIV, Hep B vaccination
v. Most adolescents clear HPV infxn within 1-2 years
w. Testicular cancer – most common cancer affecting males 15-35 yo, 1% of all cancers in men, most common @ Afro Americans with freq 1.6/100K. 30-40% may present as dull ache/heaviness, acute pain in 10%
    i. Risks: genetics (Klinefelters 47XXY for germ cell tumors; Down syndrome, testicular feminizing syndrome, true hermaphrodites, persistent Mullerian syndrome, cutaneous ichthyosis for germ cell tumors); family hx; cryptorchidism; environmental; previous testicular cancer
    ii. Germ cell, non-germ cell, extragonadal tumors
    iii. Germ cell most common – seminoma (45%) vs. nonseminoma (55%). GC 95%. Of nonseminomas, Mixed are most common (40%). Teratomas, teratocarcinomas are malignant in adults and are 30%
    iv. Embryonal cell tumor is classic pure cell nonseminomatous tumor and is uncommon at 20%. Choriocarcinoma is most lethal but least common at 1%. Yolk Sac tumors are most common prepubertal germ cell tumors, most often malignant
    v. Nongerminal tumors: stromal Leydig and Sertoli cell tumors are remaining 5%; rare and rarely malignant
    vi. Lymphoma, leukemia, and melanoma can metastasize

Fmcases week 3/4
CLIPP #2

1. Well child 2,6,9mos

a. Parent's eval of developmental status (PEDS), Ages and Stages, Denver II developmental screening

b. Mandated screening at 9, 18, 30 month checkups
c. Autism recommended at 18 mos and 2 years
d. Be concerned about birth hx, HIV/RPR/HepB/GBS/Rubella/hearing test
e. Be concerned about home, smoking, daycare, breastfeeding, # diapers
    i. Breast milk is preferred, but commercially available formulas have cow protein, soy, hydrolyzed cow protein, true elemental formulas
    ii. Never give regular cow milk before 12 mos – don't tolerate and can get colitis, cause microscopic bleeding, and anemia
    iii. Powder – 2 scoops with 4 oz water. No need to give extra water
f. Most babies lose a little weight right after birth, then regain, and expected to be at birth weight by 2 weeks
g. Most healthy term babies need 100 cal/kg/day
h. Moro reflex disappears at 4 mos - can detect MSK abnlties, neural plexus injuries
i. Continue giving formula to 2 mos old, rice cereal with spoon at 4 mos, use multivitamin if not getting enough vit D or 32 oz per day
j. Most sleep through night by 4-6 mos. Put on back to sleep to prevent SIDS, car seat at passenger side, facing raar (place in middle actually)
k. Immunizations for 2 mos old: DTaP, HepB#2, Hib, IPV, PCV13, Rota; MMR and HepA not until 12 mos old
    i. Get total of 5 DTap, 4IPV, 3-4Hib, 4 PCV13, 2MMR, 2 Varicella, 2-3 roatvirus, 2HepA, 3HepB over first 5 years
    ii. Flu for 6-59 yo
    iii. Pediarix – DtaP, HepB, IPV
    iv. Pentacel – DtaP, IPV, HiB
l. At 6 mos
    i. Baby should double birth weight by 5 mos, triple by 12 mos. Double birth length by 4 years
    ii. Red reflex – failure = cataracts, glaucoma, Rb, chorioretinitis
    iii. Can see shaken baby syndrome, retinopathy or prematurity
    iv. Milestones: roll over, sit by self, no head lag, reaching, turning to voice, babbling, stranger recognition
    v. Childproofing, car seat facing rear, no walker, new foods added every 5-7 days, reading, 2 naps/day
m. 9 mos
    i. Can start meats, finger foods, vitamins, choking hazards
    ii. Should wave bye, sit without help
    iii. At 12 mos: Stand, pincer grasp, mama dada ++ 2 other words, point, imitate
    iv. RUQ mass – hepatic neoplasm, hydronephrosis, UPJ obstruction, neuroblastoma (painless abd mass), teratoma (painless), Wilm's tumor (painless)
        1. Neuroblastoma = most frequently diagnosed neoplasm in infants, fever, pallor, weight loss, 50% before 2 yo. Small cell rosettes in BM, urine VMA elevated
        2. Wilm's – smooth, rarely cross midline, abd pain, vomiting, hypertension, 3 yo. Psudeocapsule
        3. Teratoma- mass effect symptoms
    v. LLQ mass – constipation

2. 8 year old child check

a. BMI - > 85th %ile is obese

b. ADHD – inattention, hyperactivity, impulsivity. 8-10% prevalence
c. DDx: Sensory impairment, inadequate sleep, mood disorder, learning disability, oppositional defiant disorder, conduct disorder (more severe)
d. SFx of methylphenidate: decrease appetite, tics, insomnia, decreased growth velocity. NOT: addictive, associated with later increased incidence of substance abuse, sedating/masking, increased risk of cardiac death
e. Risks for childhood obesity: high birth weight, obese parent, lower socioeconomic status, Prader-Willi syndrome. Breastfeeding is inversely proportional. maternal diabetes is risk. Early menarche is associated with BMI > 85%
f. Risks of obesity: OSA, dyslipidemia, HTN, SCFE, T2DM, steatohepatitis
g. PCOS assoc with insulin resistance
h. Screen kids at 10 or at puberty every 3 years if have risks
i. BP cuff: if too large, give falsely low BP. Too small is falsely high. Should cover 2/3 upper arm, internal bladder should cover 80-100% of circumference. White coat HTN, holding arm down at side may elevate systolic BP as much as 20-30 in adolescent
j. BP < 90th %ile normal. >95 preHTN, Stage 1 > 95 + 5 mmHg; Stage II is >99 + 5 mmHg
k. Secondary HTN:
    i. Umbilical arterial or venous line that predisposes to renovascular dz
    ii. UTIs – renal scarring
    iii. Pheo, neuroblastoma
    iv. Aortic coarctation
l. Vaccines – first flu shot is given 2x for < 9yo, 1 month apart
    i. Hep A for >23 mos for risks. Routinely recommended for 12-18 mos
m. Only 1% of overweight pts have endocrine probs, usu limit growth and lead to short stature. Obesity advances bone age and leads to early puberty
n. Motivational interviewing

3. 65yoF with insomnia

a. Causes: environment (sleep hygiene techniques), avoid caffeine and EtOH 4-6 hours before bed, sleep apnea, restless legs, periodic leg mvmt and REM sleep behavior disorder, jet lag, shift work, depression and anxiety, cardiorespiratory disorders, pain, pruritis, GERD, hyperthyroid
b. Tx: CBT, Zolpidem (Ambien) and melatonin receptor agonists
c. Hypothyroid, Parkinson's, and dementia assoc with depression
d. Risks of suicide: white male (more successful, females more likely to try), rates of completed suicide increase with age, and previously attempted. Use SAD PERSONS score
e. Depressed mood, anhedonia, 5/8 criteria for 2+ weeks: sleep, interest down, guilt, energy down, concentration down, appetite changes, psychomotor retardation, suicidal ideation. After grief, needs to be 2 months
f. Antidepressants: most work to improve NE, 5HT (serotonin), and dopamine
    i. SSRIs – block reuptake of serotonin
    ii. TCAs – block reuptake of NE and 5HT
    iii. MAO inhibitors – block pre-synaptic catabolism of NE and 5HT
    iv. Other – venlafaxine (5HT and NE reuptake inhibitor), bupropion (wellbutrin; NE and dopa reuptake inhibitor), nefazodone and trazodone (5ht antags and reuptake inhibitors), mirtazapine (remeron; NE and serotonin antagonist, antihistamine effects), duloxetine (serotonin and NE reuptake inhibitor)
    v. Sfx of SSRIs and SNRIs: headache, sleep probs (drowsy, insomnia), nausea, diarrhea, hypoNa+ (from SIADH), serotonin syndrome (lethargy, restlessness, rhabdo, renal failure, death), GI bleeding

vi. TCAs can cause arrhythmias

g. Tx: SSRIs (sertraline) and SNRIs, CBT, exercise

h. Paxil – pregnancy category D. Can cause anti-depression discontinuation syndrome

i. Hispanics – depression less identified than whites, present with somatic complaints (myalgias and fatigue)

j. Elder abuse – dementia, shared living situation, caregiver substance abuse/mental illness, heavy dependence of caregiver on elder (not vice versa), social isolation

4. 16 yo F with menorrhagia

a. HEEADSSS

i. Home, Education/Employment, Eating, Activities, Drugs, Sex, Suicide/Depression, Safety/Violence

ii. Screen for Chlamydia in all sexual non-pregnant < 24 yo, and all non-pregnant women > 25 at increased risk, all pregnant women < 24, and > 25 at incr risk

iii. Vaccines – Tdap, menactra (at 11), varicella (2nd dose recommended), HPV

iv. Can defer female pelvic exam and Pap smear until 21 and test for Chlamydia with urine

v. Daily prenatal vitamin because folic acid supplements prevent neural tube dfx

b. Preconception health care checklist: folic acid, sickle cell/thal/TaySachs/CF/hearing loss, HIV/syphilis/HepB/immunizations/Toxo (avoid cat litter)/CMV/parvovirus (5th disease), environmental toxins, smoking/EtOH, diabetes, HTN, etc

c. Pregnancy: n/v/breast tenderness/urinary frequency/fatigue/softening of cervix/uterus/cervix and vaginal walls have purplish-blue hue/uterine enlargement/fetal heart tones/fetal movement

d. Abortion is legal up to 22 weeks

e. Estimated due date: first day of last normal menstrual period: add 1 year, subtract 3 months, add 1 week

f. Order CBC, rubella abs, hep b surface ag, T&S (Rh negative women should get anti-D immune globulin to prevent hemolytic disease of newborn), RPR, HIV

g. First trimester bleeding: look at pulse, BP. Give RhoGAM if Rh neg. ¼ pts bleed in first trimester

h. Progesterone levels – if > 25, sustainable intrauterine pregnancy. If <5, evolving miscarriage or ectopic pregnancy

i. Beta HCG quant – doubles q48hrs for first 6-7 weeks. In ectopic and spontaneous abortions, hCG are usu lower and increase and less than normal rates. Molar and multiple gestations are associated with higher hCG levels

j. 3 most common causes of early bleeding: spontaneous abortion, ectopic pregnancy, idiopathic

k. Macrosomia – newborn with excessive birth weight

l. First trimester bleeding – 25-50% risk of miscarriage. Finding an intrauterine pregnancy – 3-5% risk

m. Spontaneous abortion – lost before 20 weeks:

i. Threatened: bleeding < 20 weeks

ii. Inevitable: dilated os

iii. Incomplete: some but not all intrauterine contents expelled

iv. Missed: fetal demise without uterine activity (no bleeding, e.g.)

v. Septic – with IU infxn

vi. Complete – expelled from uterus

n. 1/3 all preg end in miscarriage. 87% have normal pregnancy later

5. 70yoMwith new onset unilateral weakness

a. Embolic, thrombotic, ischemic, hemorrhagic stroke

b. NIH stroke scale

c. tPA in 3 hours intravenously, 6 hours intra-arterial tx
d. Right hand dominant pts with strokes are likely to have left hemiplegia, with right MCA infarcts affect right parietal hemisphere and may read books upside down, may have inattention to areas of room in left visual field, may deny stroke disability
e. CT can't distinguish thrombotic vs embolic strokes. 85% are thrombotic
f. Aspirin alone, aspirin + dipyridamole (better than aspirin alone), ticlopidine (marginally better than aspirin, less sfx), clopidigrel, warfarin alone (for embolic stroke secondary prevention) – should delay anticoagulation for about 2 weeks s/p stroke for risk of intracranial hemorrhage
g. Post-stroke depression – 1/3, mood disorder, SSRIs are first line

6. 5 yo F with sore throat

a. **Viral pharyngitis**, mono (posterior cervical nodes, organomegaly, hard to dx during first week), **GABHS**, peri-tonsillar abscess (shifted uvula)
b. Epiglottitis – inspiratory stridor, hot potato muffled voice, dysphagia, drooling. Tripoding. 1-6yos. Caused by H. flu
c. Pertussis
d. Croup – barking cough, inspiratory stridor, hoarse voice. Steeple sign on CXR (50%)
e. Strep throat: do rapid Ag test and send throat culture if test is negative. Use Centor score
    i. Tx: Penicillin VK. Penicillin G injection, amoxicillin, and cephalexin are fine too
    ii. Sometimes associated with rash = scarlet fever. Sandpaper like rash, strawberry tongue. Other complications: rheumatic fever, peritonsillar abscess, mastoiditis, post-strep GN
    iii. Stay out of school until had 24 hrs abx, then not contagious anymore
    iv. Can still get vaccines if sick too, but best to wait if have moderate-severe illness (fever, otitis, diarrhea, vomiting). Mild (even with fever) is fine and abx won't interfere.
f. Mono – heterophile antibody test (monospot), or CBC with increased lymphs and atypical lymphocytes
g. Vaccines: 4-6 yo: need booster of DTaP, IPV, MMR, varicella. Most states require the following to enter school: Three Hep B, 5 DTaP, 5 Polio, 2 MMR, 2 varicella
h. Well child check: hearing, vision, school, performance, diet, exercise (60 min/day), limit TV to 2 hours/day, booster seat, dental hygiene, helmet with bike riding, cross street, smoking, smoke detectors, guns, sexual abuse – talk to them about good and bad touching
i. ADHD – dx not made until 6 yo, in 2 settings, present for 6 mos

7. 55 yo M with fatigue

a. Impt to distinguish between fatigue and sleepiness (fatigue not relieved with rest)
b. 1/3 pts have no clear etiology
c. Psychological: depression, anxiety, adjustment rxn, substance abuse
d. Secondary physical causes: sfx of meds, DM, hypo/hyperthyroid, anemia, acute infxn, CVD, lung dz (COPD, e.g.), RA, malignancy, pregnancy, electrolyte abnlities
e. Physiologic: decrease in sleep, shift work, restless legs, OSA, increased physical activity, medical causes that interrupt sleep like nocturia or pain
f. Primary fatigue: chronic fatigue syndrome, fibromyalgia
g. Screen for DM in asymptomatic adults with sustained BP > 135/80 (USPSTF)
h. Screen for breast, colorectal, cervical cancers
i. Most common causes iron def anemia – colorectal cancer and adenomatous polyp. Iron absorbed in jejunum
j. 90% CRC > 50yo. First degree relative increases risk by 1.7. 3rd most common cancer in US. 2nd most common cause death in US (cancer-related death). Other risks: FAP, HNPCC, personal hx or CRC or

adenomas, personal hx of ovarian, endometrial or breast cancer, personal hx of UC or Crohn's or DM). Mixed reviews on red meat, fiber consumption, etc

k. Colonoscopy: risks: infection, tears, perforation (4/10K procedures), major bleeding (12.3/10K), deaths or hospitalizations or serious overall 25/10K. Some false negatives, some false positives

l. Screening: flex sig and FOBT q3years; colonoscopy q 10years; FOBT every year; fecal immunochemical tests (FIT) – may prove useful

m. Delivering bad news: setting up interview, perception (find out what they know about situation), invitation (ask how would like to explain information about diagnosis), knowledge, emotions and empathy, strategy and summary

n. CRC mets to pelvic LNs, liver, lung – get CT and CXR, and CEA (prognosis correlation)

o. Tx: surgery and chemo, neo-adjuvant tx. TNM staging

p. Screen family members of those diagnosed with cancer before 60 by age 40.

8. 33 y F with dysmenorrhea

a. Risks of primary dysmenorrhea (onset without pelvic pathology; secondary is related to some pathology)

i. Primary associated with increasing amounts of prostaglandins. Prevalence 20-90%. Usually occurs hours to a day before menses and lasts up to 72 hours

ii. Associated with depression/anxiety, esp in adolescents. Associated with tobacco use

iii. Most common in teens and twenties. Associated with ovulatory cycles. Classically appears 1-2 years after menarche (the time it takes for adolescent to develop regular ovulatory cycles). Early menarche is more likely to develop

iv. Increasing parity decreases dysmenorrhea

b. Pelvic exam: normal uterus is not larger than 8 weeks in size (fist). Should be mobile – with endometriosis, implants may occur on series of ligaments on each side and render it nonmobile. Mild TTP of ovaries normal. Nabothian cysts on cervix are normal: formed during metaplasia where normal columnar glands are covered by squamous epithelium. White discharge can normally be seen from os or vagina. Endometrial growths can be bluish.

c. DDx: Abnl uterine bleeding, premenstrual syndrome

i. Abnl uterine bleeding – menorrhagia (clots, >80mL blood), > 7days menses. Metrorrhagia = irregular frequent bleeding but doesn't have to be heavy. Menometrorrhagia = irregular frequent and heavy bleeding

ii. Premenstrual syndrome – occurs in second half of woman's cycle. Physical sxs: bloating, fatigue, breast tenderness, constipation, diarrhea. Behavioral sxs: irritability, easy crying, eating more. Effect on woman's life.

iii. Premenstrual dysphoric disorder = more severe, DSM criteria, significant impairment

d. Top dx: Adenomyosis, leiomyoma, cervical stenosis, chronic PID, endometriosis, fibroids, ovarian cysts

e. Uterine polyp – abnl intermenstrual or postcoital bleeding, but also with menorrhagia

f. For primary dysmenorrhea: under 20 yo, not sexually active, classic hx of suprapubic pain during first 2 days of menses, NSAIDs (decreases prostaglandins) can be started without pelvic exam. Take ibuprofen starting 1-2 days prior to menses and continuing to first days of menses. Can use combo OCPs (monophasic or triphasic) with med dose estrogen. Pregnancy test should be done in teen who is sexually active.

g. Fibroids: Mirena decreases menstrual flow, dysmenorrhea. Depo – bone density loss after years of use; may take 9-18 mos to regain regular menses after last injection; weight gain, irregular menses for weeks-months

h. Contraception: OCPs, NuvaRing, Ortho-Evra patch, Mirena, Depo, ParaGuard

i. Premenstrual syndrome tx: danazol (androgen with progesterone fx, inhibits ovulation), leuprolide (but anti-estrogen fx), OCPs, SSRIs during menses – continuous daily tx vs intermittent tx (1. Start 14 d prior to menses in luteal phase and continue until menses starts. 2. Starts on first day of sxs and continue until start of menses or 3 days after)
    i. Other txs: Vit B6 (avoid neurotox), exercise, low carbs esp in luteal phase, relaxation tx

9. #5 – 30yoF with palps

a. Tachyarrythmias – near syncope associated with palps. Most people don't notice them.
b. Anxiety/panic disorders
c. Anemia
d. Hyperthyroid – heat intolerance, tachy/palps, fatigue, wt loss, tremor, diaphoresis, depression, hyperreflexia
    i. Graves: exophthalmos or proptosis, lid lag, pretibial myxedema – most common cause of hyperthyroidism in adults and children
    ii. Goiter – iodine def, hypo/hyperthyroid, nodules, pregnancy, cancer, thyroiditis
    iii. Clonus – abnl reflex mvmts of foot induced by sudden dorsiflexion causing alternate contraction and relaxation of gastroc/soleus muscles
e. Drug abuse (incl caffeine)
f. Hashimoto's
g. Hypothal releases TRH which stims pit to produce TSH which stims thyroid to make T3/4
    i. T3/4 has neg feedbk over hypothal and ant pit and controls TRH and TSH
    ii. TRH released with low T3/4
    iii. Elevated T3/4 = low TSH; low T3/4 = high TSH, thus increased TSH = hypothyroid and decreased TSH = hyperthyroid

TSH LEVEL	**Serum Free T_4 Level**	**Condition indicated**
TSH increased	Serum Free T_4 Decreased	Hypothyroidism
TSH mildly elevated (5-10 mIU/L)	Serum Free T_4 Normal	Subclinical Hypothyroidism
TSH inappropriately normal	Serum Free T_4 Increased	Pituitary Adenoma (TSH-producing) or Thyroid Hormone Resistance
TSH decreased	Serum Free T_4 Increased	Thyrotoxicosis (Hyperthyroidism)
TSH decreased (occ. Normal or slightly elevated)	Serum Free T_4 Decreased	Central (or Pituitary) Hypothyroidism (TSH and/or TRH deficiency)
TSH decreased	Serum Free T_4 Normal Serum T_3 Increased	T_3 Toxicosis

h. Treatment of hyperthyroid – beta blocker

High RAIU	Low RAIU
Graves' disease	**Sub-acute thyroiditis**
Multi-nodular goiter	**Silent thyroiditis**
Toxic solitary nodule	*Iodine induced*
TRH secreting pituitary tumor	*Exogenous L-Thyroxine*
HCG secreting tumor	*Struma ovarii*
	Amiodarone

i. TPO abs are in 70-80% Graves patients. Thyrotropin receptor antibodies stim thyroid gland to enlarge and produce more thyroid hormone
j. Sfx of antithyroid meds - agranulocytosis

10. #7 – 53 yo M with leg swelling

1. Smoking causes most deaths in US
2. For leg swelling, expect < 2 cm variation between legs
3. DDx: lymphangitis (usu Strep), cellulitis (strep for small microlacerations, staph for ulcers, deeper), DVT, venous insufficiency (see erythema, color change, skin ulcerations near medial/lateral malleoli), peripheral artery dz (claudication; see ABI < 0.9), lymphedema (earlier is soft pitting edema, but later indurated/fibrotic/woody feeling)
4. Wells criteria for DVT
5. Wagner criteria for foot ulcer
6. LMWH vs. unfractionated: LMWH has longer half life and given subQ, doesn't require monitoring, thrombocytopenia is less likely, fixed dosing based on wt, can be used as outpt
7. First timers, anticoag for 6 mos
8. Risks of obesity: HTN, dyslipid, DM2, CAD, stroke, gallbladder dz, osteoarthritis, OSA, resp probls, endometrial ca, breast ca, colon ca
9. If INR really high but no bleeding, d/c warfarin and give vit k 5 mg orally
10. INR needs to be therapeutic for 24 hrs before d/c home

11. #19 – 39 yo M with epigastric pain

a. Dyspepsia – episodic/persistent discomfort, assoc with belching, bloating, heartburn, n/v, 25% adults
b. 50% of cases are functional (non-ulcer) dyspepsia
c. 20% is PUD, 20% is GERD, 20% is gastritis
d. Other: NSAIDs, aspirin, physiologic stress, smoking, H pylori
    i. **Risk factors for stress ulcer prophylaxis**
    ii. Prolonged mechanical ventilation
    iii. Head injury with Glasgow coma score of <=10 or inability to obey simple commands
    iv. Thermal injury involving > 35% of body surface area
    v. Partial hepatectomy
    vi. Hepatic or renal transplantation
    vii. Multiple trauma with injury severity score >= 16
    viii. Spinal cord injury
    ix. Hepatic failure
    x. History of gastric ulceration or bleeding during one year prior to admission
    xi. Presence of at least 2 of the following: Sepsis, ICU stay of greater than 1 week, Occult or overt bleeding for >=6 days, Corticosteroid therapy (>250mg hydrocortisone or equivalent daily).
    xii. In ICU patients, the number needed to treat (NNT) to prevent one clinically relevant episode of upper GI bleeding due to stress ulceration is greater than 900. Overall, this practice is over utilized, especially in non-intensive care unit patients, which results in preventable cost expenditure and increased risk of adverse events from non-judicious use of PPIs.
e. GERD can be clinical dx, PUD can be assoc with n/v several hours later, nonerosive reflux is most common form of GERD, and pts with GERD have lower health related QOL than pts with HF
f. PUD pain relieved by meals
g. H pylori – spread through saliva, feces, food, water
    i. 90% of pts with DU are infected
    ii. Incidence is declining worldwide
    iii. PPI + amox 1 gm + clarithromycin 500 mg all BID for 10-14 d
    iv. PPI + flagyl + tetracycline + bismuth subsalicylate QID 10-14 d

12. #21 – 12yoF with fever

a. Lung consolidation – exam: egophony, tactile fremitus (increased vibration in consolidation, decreased in effusion), dullness to percussion, rales, whispered pectoriloquy (louder over areas of consolidation)
b. McIsaac – for strep testing, 1 point for fever > 38C, no cough, tonsillar exudates, and cervical LAD, age < 15 (subtract 1 point if > 45). If > 2 points, order rapid strep
c. Nasopharyngeal swab for flu testing
d. Flu – strep pnuemo (2-3% outpt, 14% hospitalized) and otitis media (10-50%) = most common complications, also neuro sxs (aseptic meningitis, GB syndrome, febrile seizures)
e. Tx strep pneumo with amoxicillin 90 mg/kg/day divided into TID dosing for 7-10d
    i. In kids < 3 mos to adolescence, use amoxicillin. If atypical pneumo, use Zpak
f. Antivirals such as zanamivir, oseltamivir, amantadine, and rimantadine can decrease the duration of influenza symptoms by approximately 24 hours, but they are only recommended when given within the first 48 hours of illness
g. There has been one study that found that honey was better at decreasing cough severity in children than dextromethorphan, a common cough suppressant
h. Infants less than three weeks should always be admitted when they have pneumonia. We treat infants with ampicillin and gentamicin with dosages dependent upon the age and weight of the infants. The most common pathogens are Escherichia coli, Group B streptococci and Listeria monocytogenes. If the infant is less than 3-6 months of age, the new guidelines recommend admitting if we suspect bacterial pneumonia. The most common pathogens in this age group are streptococcus pneumoniae, Chlamydia trachomatis and viruses such as Adenovirus, Influenza virus, Respiratory syncytial virus and Parainfluenza viruses.
i. Acute bronchitis – supportive tx, no abx. Use of beta2 agonist for wheezing, but not for only coughing
j. Healthy BMI is between 5-85%, overweight is 85-95%, and obese is > 95%
    i. Risk of DM2, HTN, hypercholesterolemia
    ii. Check fasting lipids on every child with BMI > 85th %ile
    iii. Goal total chol = 170 mg/dl, LDL = 130. Initial tx = diet/exercise. Drugs for LDL > 190 or > 160 + risk factors, but only if > 10 yo and Tanner 2/menarche
    iv. Increased risk of Blount's disease (bowing of legs) and slipped femoral epiphysis (SCFE), GI probs; screen for steatosis at age 10 if BMI > 95% or 84-94%+risk factors; do every 2 years with AST/ALT and refer to GI if levels 2x upper limit of normal
    v. Can see gyn probs (early menarche, PCOS), OSA, asthma, pseudotumor cerebri, acanthosis nigricans, intertrigo, psychosocial probs
    vi. Prevalence of adolescent obesity in US – 17%
    vii. experts recommend that children have 1 hour of physical activity per day and limit television viewing to 2 hours per day.
    viii. Those who have complications should pursue weight loss until their BMI is at or below the 85th percentile. The general recommendation is about one pound per month.

Treatment of Pneumonia in Children

Age of child	Primary bacteria /viruses involved	Hospital Admission Criteria	Treatment Inpatient	Treatment Outpatient
0-3 weeks	Escherichia coli, Group B	Admit all infants	Ampicillin and Gentamicin	

	streptococci, Listeria monocytogenes;			
3 weeks – 3 months	S.pneumoniae; Chlamydia trachomatis, Adenovirus, Influenza virus, RSV, and Parainfluenza viruses	Admit if concern for bacterial pneumonia or if in respiratory distress	Ampicillin or penicillin G or ceftriaxone if child isn't immunized or if there are resistant strains	
4 months -5 years	Chlamydia pneumoniae, Mycoplasma pneumoniae, S. pneumoniae Adenovirus, Influenza virus, Parainfluenza virus, Rhinovirus and RSV	Hypoxia RR > 70 Difficulty breathing, intermittent apnea, lack of family support	Ampicillin or penicillin G or ceftriaxone if child isn't immunized or if there are resistant strains	Amoxicillin for 7-10 days
5 year to adolescence	C. pneumoniae; M. pneumoniae; S. pneumonia	RR > 50, Hypoxic or in distress, lack of family support to care for them when ill	Ampicillin or penicillin G or ceftriaxone if child isn't immunized or if there are resistant strains	Amoxicillin or azithromycin if concerned child has atypical pneumonia

14. #33 – 28 yo F with dizziness

a. Children > 2yo with uncomplicated acute otitis media can be treated without abx
b. Children < 6 mos should get abx
c. Those inbetween can have cautious observation
d. Acute maxillary sinusitis does NOT require abx (but study excluded complications)
e. Dizziness
    i. Cardiac arrhythmias, AS – syncope
    ii. Dysequilibrium – off balance
    iii. Vertigo
        1. Central – CNS probs. Nystagmus will change direction, does not inhibit with focus
        2. Peripheral – inner ear/vestibular apparatus. Assoc with unidirectional (horizontal) nystagmus that doesn't change direction. Inhibited by fixating on a point and intensifies when fixation is gone
            a. Menieres' dz – with tinnitus, hearing loss

b. Vestibular neuritis – viral illness inflames vestibular br of CN8
c. BPPV – short bursts of positional vertigo. Most common cause. Dix Hallpike maneuver. Fast phase is in direction of bad ear
d. Acute labyrinthitis – infxn affects both branches of CN8 and results in tinnitus and/or hearing loss + vertigo
e. Head thrust test –

3. Tx: diuretics (for Meniere's dz, but insufficient evidence), Epley maneuvers (BPPV), vestibular rehabilitation (unilateral peripheral vestibular dysfunc), vestibular suppressant meds (anticholinergics like meclizine/dimenhydrinate can control n/v; also metoclopramide and promethazine)

Maximum heart rate: 220 - age