

Book of Contents

CARDIOVASCULAR

Vascular system composed of= Arteries, veins

Deoxygenated blood to —> RA —> RV —> Lungs —> changes deoxygenated to oxygenated blood that pushes into LA —> LV —> aorta —> body

HEART FAILURE:

- If they do not specify in the question Right sided HF it is **ALWAYS** Left sided HF
- LEFT SIDED HF: Prevents the warm, red oxygenated blood from going into our body.
 - LEFT SD= LUNGS, fluid will get backed up into lungs
 - Cold, clammy
 - Deoxygenated
 - Pallor, pale
 - Edema (excess fluid) in lungs so you get pulmonary edema
 - Pink frothy sputum
 - Patient will cough
 - Hear crackles
 - Dyspnea, Orthopnea
 - Think fluid overload
 - JVD distention
 - Periorbital edema
 - Puffiness in face
 - Peripheral edema, pitting edema
 - Ascites
 - Liver & spleen can enlarge (hepatosplenomegaly)
 - Distended abdomen
- RIGHT SIDED HF: Blood doesn't get past the pulmonic valve, the patient will not receive warm, red, oxygenated blood.
 - Cold, clammy
 - Pallor, pale
 - JVD
 - Periorbital edema
 - Peripheral edema
 - Ascites
 - Pitting edema
 - Increased Abdominal distention
- Test to confirm HF is:
 - BNP (Brain natriuretic peptide), NORMAL = <100

- **TREATMENT FOR HF:**

- GOAL: Need to get fluid off
- Diuretics:

- **Loop (Furosemide, Torsemide, Bumetanide), are potassium wasting.**

- Causes increase Na^+ & H_2O (water)
- Potassium decreases
- Need to know s/s: mnemonic = "OOHH DANG"
 - Orthostatic Hypotension
 - Risk for falls
 - Educate pts: change positions slowly
 - Ototoxicity
 - Tinnitus(ringing in ears)
 - Balance issues
 - Fullness in ears
 - Treatment:
 - **Slow the infusion rate!!!!** If given too fast it will cause ototoxicity.
 - Hypokalemia
 - Know s/s
 - Identify with muscle cramps
 - Hypomagnesemia
 - Look for tremors
 - Dehydration
 - Allergy (is a sulfa drug, so be alert to patients who are allergic to sulfa drugs.)
 - Nephrotoxicity
 - Be concerned with lab values: BUN, Creatine
 - Normal Creatine: 0.6 - 1.2, Look for a 2 or above. Indicated kidneys are in trouble
 - Gout

- **Thiazide Diuretics:**

- Causes increase Na^+ & H_2O (water)
- Potassium decreases
- Watch s/s:
 - Is potassium wasting, Hypokalemia
 - Orthostatic hypotension
 - Nephrotoxic
 - Sulfa drug (watch allergy)
- Drugs include:
 - Hydrochlorothiazide
 - Chlorthalidone

■ **Potassium Sparing diuretics:**

- These are aldosterone antagonists
 - RAAS (Renin-angiotensin aldosterone system)
 - Aldosterone causes an increase in Na⁺ & H₂O (water), causing a decrease in Potassium
 - K⁺ & Na⁺ are opposite of each other:
 - Potassium goes up, sodium goes down
 - Causes a decrease in Na⁺ & H₂O(water)
 - Potassium increases, hyperkalemia
 - Know s/s of Hyperkalemia
- Drugs include:
 - Spironolactone
 - Eplerenone

● **MANAGEMENT OF HF:**

- Education:
 - Check daily weights
 - Monitor intake and output
 - Teach patients to avoid foods with high sodium
 - Processed
 - Cans
 - Packaged
 - Can have a salt substitute – K⁺ → can help decrease blood pressure and fluid retention
 - When do you say the opposite of the following ALWAYS CHOOSE THESE
 - Cardiac rehab – (Exercise)
 - Don't drink
 - Don't smoke
 - Eat healthy
- Heart Failure presented as a priority When you see fluid overload with trouble breathing, this becomes an AIRWAY problem!!!

CHILD HEALTH:

- Tetralogy of Fallot:

- Overriding aorta (takes over the VSD with the pulmonic stenosis)
 - When this happens the Patient becomes:
 - cyanotic (blue) & deoxygenated
 - Will have “Tet Spells”
 - This overriding of the aorta causes a decrease in blood flow back to the heart, AKA (Decreased venous return)
 - Infants will cause this decrease venous return when:
 - Crying
 - Eating a large meal
 - Stress
 - Intervention:
 - Put infants in a knee chest position
 - If Patient is in preschool, teach them to squat
 - Treatment:
 - Surgery

- Kawasaki Disease:

- Is a viral infection of unknown etiology
 - Which causes vasculitis
 - Kawasaki Disease goes after your coronary artery
 - Putting patients **at risk for an aneurysm rupture**
- S/S: Mnemonic: “CRASH”
 - Conjunctivitis
 - Rash
 - Art. Aneurysm
 - Strawberry tongue
 - Hand/ feet swelling
 - Can also cause extremely high fevers: between 104-105
 - Worried about febrile seizures
- First thing you're worried about is **hemorrhage** (from rupture of the aneurysm)
- Second thing you're worried about is **febrile seizures**.
- Treatment:
 - Goal: prevent rupture and the need for open heart surgery
 - Make sure and monitor the heart
 - Administer IV immunoglobulin + ASA
 - Administer Aspirin

- **NEVER GIVE ASPIRIN WITH A VIRAL INFECTION EXCEPT WHEN TREATING A PATIENT WITH KAWASAKI DISEASE. DUE TO RISK OF REYE'S SYNDROME:**
 - **Where they develop encephalopathy (inflammation of the brain)**
- Need to draw labs:
 - CBC
 - More specifically looking at WBC w/differential (breaking down each type of WBC, there are 5, but just focus on these 3)
 - Neutrophils elevated with a bacterial infection.
 - Lymphocytes elevated with a viral infection
 - Eosinophils elevated with a parasitic infection and allergies

PATENT DUCTUS ARTERIOSUS:

- This is a Normal finding in utero, in fact you need this opening to occur.
- Once the baby is born, Patent Ductus may still remain open.
 - Within the first 72 hours you can hear a **loud machine like murmur.**
(Normal, no cause for concern)
- Within 72 hrs, the patent ductus should close(no longer should hear the loud machine like murmur)
- Treatment:
 - If still open, need to give NSAIDS to help close it off
 - Drug of choice: Indomethacin
 - NSAIDS should close it off, but if not surgery is next treatment
- Reason for why women are advised not to take NSAIDS during pregnancy is because it will cause a Premature closure of the Patent Ductus Arteriosus and you need this opening during utero.

SEPTAL DEFECTS:

- Anatomical Defects
 - If between the RA & LA = Atrial Septal Defect
 - If between the RV & LV = Ventricular Septal Defect
- Babies heart will over work to compensate
 - They often present lethargy
- Treatment:
 - Surgery is necessary

COARCTATION OF AORTA:

- Known as a kink in the aorta, (just causes blood to move from point A to B a little slower)

- Patients often born with it and will present later on in life
- This is more of a distraction when presented on boards d/t patients can live with this just fine
- S/S:
 - Weakened/diminished pulses
 - Turner Syndrome
 - Chromosome: X,O(missing one of the female chromosome) Normal = X,X
 - Short stature
 - Webbed neck
 - Breast buds
 - Streaked ovaries

GROWTH AND DEVELOPMENTAL:

- Birth to 1 year = Infants
- 1 year to 3 years = Toddlers
- 3 to 5 years old= Preschool
- 5 to 11/12 years = School age
- 12 years and older = Adolescents
- You want to know each of the developmental milestones
- Need to know how each milestone will react in:
 - Hospitalization
 - what can you give them to ease stress/ anxiety
 - Help make them feel more at home
 - Toys
 - How do you educate these different milestones when it comes to surgery
 - Concept of death

INFANT CPR:

- First thing you need to do is check their pulse(brachial pulse)
- Second thing: If no pulse, initiate CPR, begin Chest compressions
 - Use 2 fingers/thumbs, center of infants chest, just below the nipple line
 - Give little support under neck, back
 - Go $\frac{1}{3}$ anterior/posterior depth
 - Rate: 30 compressions: 2 breaths (Single rescuer)
 - Rate: 15 compressions: 2 breaths (2 rescuers)

ADULT HEALTH:

CORONARY ARTERY DISEASE:

- Patients start to develop atherosclerotic plaques
- Risk Factors:
 - Smoking
 - Obesity
 - Diabetes
 - Family history
 - High BP
 - Poor diet/nutrition
 - Poor cholesterol levels

RULE OF 50's:

- Total cholesterol normal: <200
- Triglycerides normal: <150
- LDL Normal: <100
- HDL Normal: >50

● TREATMENT OF CORONARY ARTERY DISEASE:

- First step: **Education**
- Second Step: **Administer medications, start with statins**
 - Statins
 - Helps decrease LDL levels
 - Helps increase HDL levels
 - Prior to administering check the liver
 - Check AST/ALT levels
 - Administer at bedtime (best way to attack the cholesterol)
 - Watch for s/s:
 - Myopathy
 - Rhabdomyolysis(breaking down of muscle)
 - Development of acute kidney injury —> Acute renal failure
 - **Patients will present with Muscle & body aches(watch for these)**
 - If you start to see these side effects, need to **aggressively hydrate**
- Third step: **Administer Nitrates**
 - Chest pain is AKA Angina
 - Two types:
 - Stable:
 - Predictable
 - Chest pain w/ exertion
 - Unstable:
 - Unpredictable

- Chest pain at rest
- This chest pain occurs d/t decrease in blood flow to the heart, which can lead to an infarction
 - Goal: Need to open up(dilate) this artery
 - Medication:
 - Nitrates (Nitroglycerin)
 - Can wear for about 12 to 14 hours
 - Contraindicated with:
 - Drugs:
 - — nifedipine
 - Educate to avoid taking —nifedipine medications while taking nitrates
 - Goal: switch them if they are chronic to something more sustainable like a Calcium channel Blocker.
- Nitroglycerin Sublingual
 - Signs and symptoms:
 - Patients can develop orthostatic Hypotension when taking this medication
 - Educate to change positions slowly
 - Headache
 - Flushing
 - Education:
 - Change positions slowly
 - Take one under the tongue every five minutes up to 3 doses
 - Take the first dose and then call 911
 - Heat/sun sensitive
 - Keep in a cool/dry place
 - Keep in dark tinted bottle, away from light
- Nitroglycerin Patches:
 - Education
 - Can wear for about
 - Make sure to put it on a dry, clean, unaffected, hairless area
 - NEVER wear multiple patches at once
 - NEVER cut a patch
 - Make sure and rotate placement of patch
 - Showing with patch is okay
 - When discarding the patch, make sure to fold it.
- Fourth step: Administer Calcium Channel Blocker
 - For a patient with a chronic problem
 - Get them on a Calcium Channel Blocker
 - These are Vasodilators

- Drugs:
 - — dipine
- Contraindications:
 - Grapefruits
- Fifth step: **Placement of a Stent**
 - When none of steps above work, we are now concerned of developing an Myocardial infarction (Heart attack)
 - Concerned of potassium being released and causing VFib
 - Concerned for weakening of the wall causing:
 - Wall rupture / hemorrhage
 - **Treatment:**
 - Placement of a stent
 - Go in from the femoral artery
 - Patient needs to keep leg straight
 - Make sure groin area is clean
 - Post-Op concern: Hemorrhage
 - Educate patients to not lift, no straining, etc..
 - If platelets develop on the stent, risk for developing clots
 - Need to give Patient: **Antiplatelet drugs:**
 - **Drugs include:**
 - Clopidogrel & Aspirin
 - **Need to monitor for bleeding**
- Sixth step: **CABG when there is 100% occlusion**
 - When above steps don't work, Patient will need a:
 - Coronary artery Bypass Graft (CABG)
 - Leg is stripped of the great saphenous vein
 - Post-Op CABG:
 - Normal findings:
 - Numbness
 - Tingling
 - Itching
 - Fever <100.4
 - Clean wound with soap and water
 - When discharged patients are not allowed to lift or drive for six weeks
 - NO BATHS, Shower GOOD
 - Can resume sexual intercourse when they can walk up two flights of stairs without chest pain.

CLARIFICATION ON TERMS:

- **Peripheral Vascular Disease (PVD)**
 - Board term for some sort of vascular (arteries, veins) disease
- **Peripheral Arterial Disease (PAD):**
 - Specifically talking about the artery

- Risk factors:
 - Smoking
 - Drinking
 - Obesity
 - Cholesterol, etc...
- Patients will have a decrease in blood supply, causes:
 - Skin, Hair follicles (Hairless, brown skin)
 - Peripheral neuropathy
 - Feet cold and clammy
 - Intermittent Claudication (pain)
- **Educate:**
 - DO NOT elevate legs, have them dangle their legs (dependent leg position)
 - DO NOT wear compression stockings
 - Wear closed toed shoes
 - Cutting nails straight
 - Routinely examine feet
- Goal: is to avoid severe infection that would result in amputation
- **Venous Insufficiency:**
 - Veins are performing insufficiently
 - Patients will develop:
 - Edema
 - Mostly seen around ankle
 - Risk to developing ulcer in ankle
 - **Educate:**
 - To elevate legs
 - Wear compression stockings
 - Rest periods

CARDIAC TAMPONADE:

- This is a medical emergency, this is a FREAK OUT ABOUT
- Causes:
 - Pericardial effusion
 - Something gets between the pericardium and the heart, causing fluid to build up causing the heart to get stuck.
 - Resulting in blood not being able to reach the heart and getting backed up.
 - Also cause the heart to not be able to release any blood
 - S/S patients will develop:
 - **Becks Triad:**
 - Low blood pressure
 - JVD
 - Muffled Heart Sound (**Helps differentiate Cardiac TAMPONADE from Heart Failure**)

- Other s/s:
 - Edema
 - Splenomegaly
 - Cold, clammy
 - Pallor
- **TREATMENT:**
 - Need to remove the fluid
 - Procedure:
 - Pericardiocentesis

ACUTE PERICARDITIS:

- S/S:
 - Patient will have Chest pain
 - EKG(always get when someone comes in with chest pain)
 - Will see ST segment elevation in ALL LEADS (When you see this you know for sure it is acute pericarditis)
 - Auscultation
 - Will hear a friction rub at Erb's point
- **TREATMENT:** Do not want it to progress
 - Administer NSAIDS & Colchicine(can also be used for gout)
 - Can relieve chest pain by sitting up and leaning forward

APT M (These are heart sounds)

- Sternal Border
- Intercoastal:
 - Space between the ribs
 - These are numbered
- Midclavicular
- **Mnemonic: "A PET MONKEY"**
 - **A**ortic- 2nd right intercostal space sternal border
 - **P**ulmonic-2nd intercostal space at left sternal border
 - **E**rbs point- 3rd intercostal space, left sternal border
 - **T**ricuspid- 4th intercostal space at left sternal border
 - **M**itral- 5th intercostal space in the midclavicular line (also known as PMI- point of maximal impulse.

AORTIC DISSECTION: A tearing / split in the aorta

- This is a FOA: Hemorrhage

Some Causes:

- Trauma (most common)
- Congenital

Clinical Manifestations:

- Decreased BP
- Increased HR
- Chest pain that radiates to the back (upper back or mid scapular)

TREATMENT: Wanna get HR down

- Ultimately going to need surgery, but need to stabilize patients as best as you can.
- Administer IV fluids
- Administer Beta blockers (help decrease HR)
 - Labetalol

BETA BLOCKERS:

- End in -lol
- Primary function is to decrease BP, decrease HR
- **Side effect:**
 - Can cause bronchospasms
 - Decrease libido
 - Depression
- Contraindicated in patients with asthma

BACTERIAL ENDOCARDITIS:

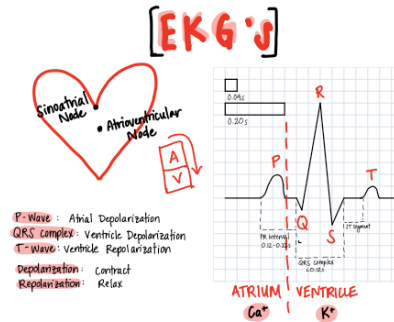
- Infection of the lining of the heart and heart valves
- Occurs when bacteria in the blood enters the heart
- **Can ultimately lead to Heart failure (will need a valve replacement)**
- Those at risk include:
 - **IV drug users**
 - Heart valve disease
 - Weak immune system
 - Poor dental hygiene
- Signs & symptoms:
 - Fever
 - N/V
 - Achy muscles
 - Trouble breathing, cough
 - Blood in urine
 - Swelling of feet, legs or abdomen
- Possible complications:
 - Pulmonary embolism:
 - Causes:

- Fat
 - Air
 - Thrombus
 - Bacterial
 - Amniotic
 - Tumor
- Tricuspid Valve regurgitation
 - 5th intercostal space left sternal border
- **Heart Failure**
- **TREATMENT:**
 - Antibiotics (maybe for many weeks)
 - If damage to valves become severe you may need:
 - Valve replacement (3 ways)
 - Porcine (Pig heart)
 - Bovine (Cow heart)
 - Mechanical
 - Want INR for warfarin between 2.5-3.5
- Education for post op valve replacement:
 - Worried about rejection
 - Put patients on immunosuppressants
 - Educate about Infection
 - Teach ways to identify an infection
 - Avoid large crowds, concerts
 - Avoid someone who just had received a live vaccine (MMR, Intranasal influenza, varicella, rotavirus)

EKG

- **NORMAL SINUS RHYTHM:**

- Regular rhythm
 - 60-100
- Every wave has a P wave(atrium) followed by a QRS(ventricular)
- Atrium is controlled by calcium
- Ventricle is controlled by potassium



How to calculate HR:

300
BIG BOXES

HALLMARK SIGNS:

- Saw tooth appearance = Atrial Flutter
- Quivering = Atrial Fibrillation
- Mountain peaks = V Tach
- Tall peaked T-waves = VFib
- M's + W's = Torsades de Pointes
- ↑ ST elevation = MI or electrolyte imbalance
↳ Tombstoning
- ↓ ST depression = electrolyte imbalance

- **SINUS BRADYCARDIA:**

- Less than 60
- Treatment:
 - Administer atropine (helps increase HR)
 - Contraindications
 - Glaucoma
 - Elderly
 - Urinary retention
 - If atropine does not work, put patient on a pacemaker
 - Put in via femoral artery
 - Education:
 - Be careful with them sitting up, don't put pressure on groin area
 - Don't put arms over head until healed properly
 - Be careful of MRI
 - Airport

- **SINUS TACHYCARDIA:**

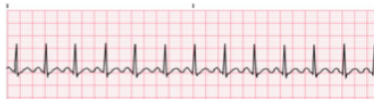
- Greater than 100
- Treatment:
 - Administer beta blockers
 - Help decrease HR
 - Worried about:
 - bradycardia
 - Wheezing
 - Bronchospasm
 - Contraindications in asthma patients
- **AFIB:**
 - This is the Pwave
 - Calcium controls this
 - Treatment:
 - Administer a CCB (Diltazem)
 - Helps get heart rate back to a regular rhythm
 - Administer amiodarone
 - Educate patients to get:
 - PFTs- Pulmonary Function test
 - TFTs- Thyroid function test
 - LFTs- Liver function test
 - Jaundice
 - Hepatomegaly
 - Worried about patients when:
 - Can cause restrictive lung disease:
 - Watch for changes in respiratory symptoms
 - SOB
 - **“SAT FOR A PHOTO”**
 - Remember the following drugs, they are photosensitive
 - Sulfa drugs
 - Amiodarone
 - Tetracyclins

BRADYCARDIA



Tx: ① Atropine → Anticholinergic effect < 10^{-3} muscarinic antagonist
② Pacemaker ↑ HR

TACHYCARDIA



Tx: ① Beta Blocker -lol < 10^{-3} asthma ↓ HR

ATRIAL FIBRILLATION



Tx: ① Calcium Channel Blocker diltiazem -diltiazem verapamil
Ca²⁺ controls atrium
② Amiodarone CONTROL RATE
-MTX, LETS, TPTs
-photosensitivity

- ATRIAL FLUTTER

- Watch for a saw-tooth flutter
- Treatment:
 - Amiodarone

- V-TACH VS SVT:

- Differentiate between the two by looking at the QRS
 - There will be a wide complex
 - Greater than 3 little boxes (between the Q & S)
 - This is VTACH
 - There will be a narrow complex
 - Less than 3 narrow boxes (between the Q & S)
 - This is SVT
- Treatment:
 - First thing:
 - Less invasive
 - Bear down (Valsalva maneuver)
 - Ice/water
 - Carotid massage
 - 2nd step: Administer adenosine
 - 1 to 2 second push via IVpush
 - Half life is 5 seconds

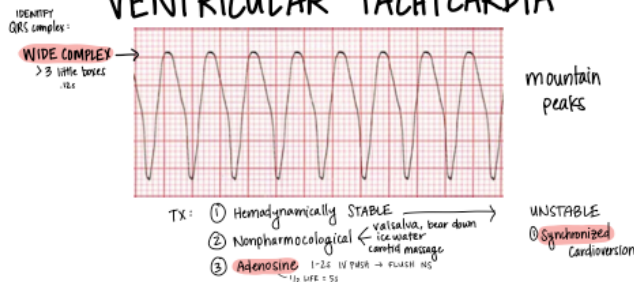
- Then flush the line
- 3rd step:
 - If patient becomes hemodynamically unstable
 - Synchronized cardioversion
 - For someone who is showing signs of unresponsiveness, change in LOC, except for someone who is in VFIB

ATRIAL FLUTTER

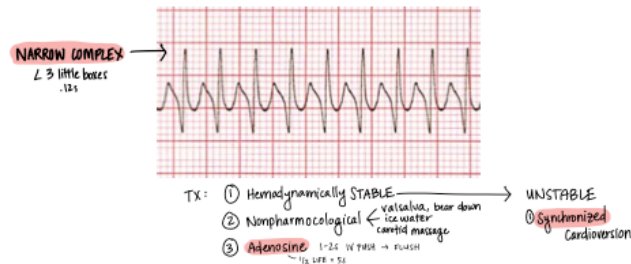


Tx: ① Amiodorone

VENTRICULAR TACHYCARDIA

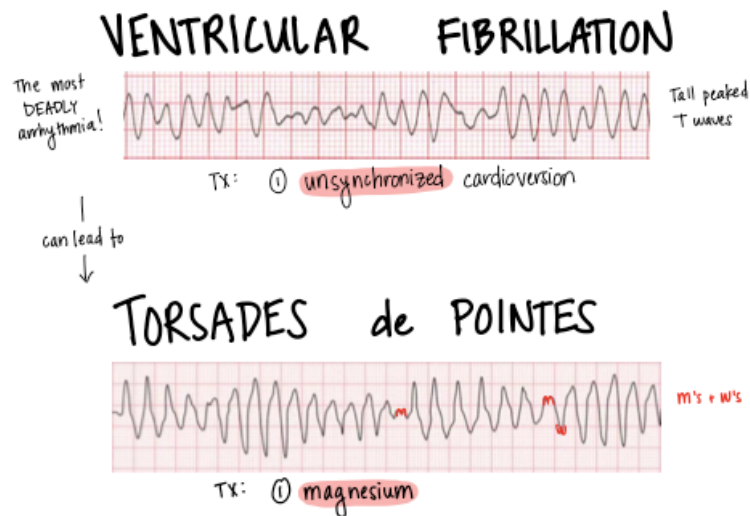


SUPRAVENTRICULAR TACHYCARDIA (SVT)



- **VFIB:**
 - Irregular, no p or QRS waves
 - Need to give unsynchronized cardioversion (Shock them)

- **TORSADES:**
 - Looks similar to VFIB
 - But You will see “M’s” and W’s in the strip
 - Treatment:
 - Magnesium



- **ACE INHIBITORS:**
 - End in -pril
 - Worried about: (Adverse effects)
 - Angioedema
 - Swollen lips, tongue

- Cough
- Increased potassium
- If someone has adverse reactions instead prescribe these patients -sartans (Losartan)
- Both these drugs can cause hyperkalemia
- Both drugs are teratogens

REMEMBER THIS SAYING: “HYPOTENSIVE MOTHERS LOVE NIFEDIPINE”

- H= Hydralazine
- M= Methyldopa
- L= Labetalol
- N= Nifedipine
- If you don't see any of these four blood pressure drugs then most likely the drug is teratogens

GASTROINTESTINAL:

In general treatment for GI patients:

- NPO
- Start IV fluids
- Pain medication
- Administer a proton pump inhibitor

PEDIATRICS / CHILD HEALTH

INTUSSUSCEPTION:

“TELESCOPING OF BOWEL”

- Part of intestine telescopes into itself
- Causes decreased vascular supply causing it to eventually die off
- Manifestations:
 - Jelly like, bloody mucous stool
 - Sausage shaped mass on abdomen
 - N/V (bilious vomiting)
- TREATMENT:
 - Air enema (pneumatic enema)

PYLORIC STENOSIS:

- The pylorus is now narrowed
- Manifestations:
 - Projectile vomiting (find out if it is really is projectile vomiting or another reason(example: eating too much)
 - Need to assess more
 - Look for “Tell me more”
 - What are they eating
 - Are they burping them after feedings
 - Feeding them too much
 - Laying them down too soon after feedings
 - N/V(non bilious vomiting)
 - Olive shaped mass
 - S/S of dehydration
 - Patients become dehydrated
 - Increased HR
 - FOA: Infant who is lethargic, grunting
- TREATMENTS:
 - NPO
 - IV FLUIDS
 - PAIN MEDS

- PPI
- May need surgery
- A child with pyloric stenosis can develop metabolic alkalosis
 - Ph= greater than 7.45
 - HCO₃ = greater than 26

DEHYDRATION:

Signs and symptoms:

- Tea colored urine
- Sunken Fontanel
- Specific gravity:
 - Normal: 1.003 - 1.030
 - Will be increased
- Serum osmolality: increased
- Urine osmolality: increased
- Very fussy baby
 - FOA: becomes lethargic, grunting
- Know difference between serum osmolality vs. Urine osmolality for an infant that is dehydrated:
 - Osmolality = concentration
 - Serum osmolality(concentration)
 - Increased
 - Look at CBC
 - Look at H&H
 - Will be increased if serum osmolality is increased
 - See an increase in this with dehydration
 - Urine osmolality (concentration)
 - Assess amount of diapers
 - Will see a decrease in amount of wet diapers
 - Urine osmolality:
 - Will be high

HIRSCHSPRUNG DISEASE:

- A closed off anal sphincter d/t nerve issue
- Often seen within first 48 hours of life (newborns)
- Should have a bowel movement within 48 hours, if no bowel movement we are concerned and may suspect HIRSCHSPRUNG disease.
- This causes our stool to have no where to go eventually causing
 - Megacolon (d/t the build up in colon)
 - Then eventually a toxic megacolon develops
- Worried about:
 - Perforation

- Peritonitis
- Septic
- Patients will have Bilious vomiting
- **TREATMENT:**
 - NPO
 - IV fluids
 - Pain medications
 - PPI
 - Will need surgery

CELIAC DISEASE:

- Allergic reaction to gluten
- Signs & symptoms
 - Skin rash (most common first seen)
 - Bloating, gas
 - Fatigue
 - GI upset
 - Headache
 - Joint pain
- Important to Educate to Avoid for lifelong:
 - Barley
 - Rye
 - Oats
 - Wheat

TRACHEOESOPHAGEAL FISTULA WITH ESOPHAGEAL ATRESIA:

- This is a FOA: Airway
- Esophagus that is closed off
- Infants are born with this
 - Often seen by the first feed
 - “Goes down wrong pipe”
- S/S:
 - Cough
 - Cyanotic
 - Choking
- **TREATMENT:**
 - NPO
 - IV fluids
 - Pain medication
 - PPI
 - Will need surgery

CYSTIC FIBROSIS: GI PORTION

- In the GI, it messes with the Pancreas
- Is a genetic disorder causing:
 - Malabsorption
 - Malnutrition
- Prevents patients from keeping salt in our body
 - Excretes through skin
 - Salt and water both being excreted
- Both parents need to carry the gene
- Will mess up the pancreas
 - Causing it to no longer produce digestive enzymes
- **TREATMENT:**
 - Increase salt
 - 2-3 times the daily value
 - IV fluids
 - Administer digestive enzymes (pancreas)
 - Amylase
 - Lipase
 - **Will give with every single snack and/or meal**
 - High fat, high protein, high calorie diet
 - Give multivitamins
 - A, D, E, K

MILK:

- Contains vitamin D & calcium
- Doesn't contain IRON
- Children who drink milk for meals they can become anemic
- Education
 - Parents to purchase fortified formula
 - Can introduce whole milk/cows milk at 1 years old
 - Never give honey before one years old, can cause botulism, flaccid paralysis
 - Boards with present patient as lethargic
 - Is also in bulging cans
 - Can start to introduce children solid foods at 6 months
 - One at a time, 4-7 days, puréed food form

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 - Headache
 - Joint pain
- Important to Educate to Avoid for lifelong:
 - Barley
 - Rye
 - Oats
 - Wheat

TRACHEOESOPHAGEAL FISTULA WITH ESOPHAGEAL ATRESIA:

- This is a FOA: Airway
- Esophagus that is closed off
- Infants are born with this
 - Often seen by the first feed
 - “Goes down wrong pipe”
- S/S:
 - Cough
 - Cyanotic
 - Choking
- **TREATMENT:**
 - NPO

- IV fluids
- Pain medication
- PPI
- Will need surgery

CYSTIC FIBROSIS: GI PORTION

- In the GI, it messes with the Pancreas
- Is a genetic disorder causing:
 - Malabsorption
 - Malnutrition
- Prevents patients from keeping salt in our body
 - Excretes through skin
 - Salt and water both being excreted
- Both parents need to carry the gene
- Will mess up the pancreas
 - Causing it to no longer produce digestive enzymes
- **TREATMENT:**
 - Increase salt
 - 2-3 times the daily value
 - IV fluids
 - Administer digestive enzymes (pancreas)
 - Amylase
 - Lipase
 - **Will give with every single snack and/or meal**
 - High fat, high protein, high calorie diet
 - Give multivitamins
 - A, D, E, K

MILK:

- Contains vitamin D & calcium
- Doesn't contain IRON
- Children who drink milk for meals they can become anemic
- Education
 - Parents to purchase fortified formula
 - Can introduce whole milk/cows milk at 1 years old
 - Never give honey before one years old, can cause botulism, flaccid paralysis
 - Boards with present patient as lethargic
 - Is also in bulging cans
 - Can start to introduce children solid foods at 6 months
 - One at a time, 4-7 days, puréed food form

NOTES:

UPPER GI:

GERD VS ACID RefLUX

- Acid reflux:
 - The acid you eat comes up and causes a burning sensation.
 - **Treatment:**
 - Administer an antacid (Tums)
 - Drugs include:
 - Magnesium hydroxide
 - Aluminum hydroxide
 - Calcium carbonate
 - **NEVER give antacids with other medications**
 - **Can give another medication 2 hours after taking an antacid**
 - Administer Bismuth salicylate (pepto)
 - Will help decrease the acidity to help neutralize the pH in the stomach
 - If you develop this chronically you now have GERD
- GERD:
 - A chronic issue of acidity
 - Don't give a person with GERD antacids d/t patient will develop metabolic alkalosis
 - **Treatment:**
 - PPI
 - End in -prazole
 - Omeprazole
 - Pantoprazole
 - Lansoprazole
 - Decreases the ability to make acid
 - Adverse effects :
 - Decreases the absorption of calcium
 - Long term, we are concerned with the development of osteoporosis
 - Education:
 - Increase their calcium consumption, supplements
 - Give them calcium with vitamin D
 - Encourage patients to get a dexa scan
 - Encourage them to perform weight bearing exercises
 - Increased risk for getting c-diff
 - Administer Histamine 2 blockers

- Drugs include: end in -tidine
 - Cimetidine
 - Ranitidine
 - Famotidine

GASTRITIS:

- Inflammation of the stomach lining
- Worried about developing an ulcer:
 - Two types:
 - Gastric ulcer
 - Cause:
 - NSAIDS chronically
 - They will decrease prostaglandins
 - Barrier that protects our stomach lining from the acid is being depleted
 - Resulting in a development of an ulcer
 - Worried about:
 - Bleeding
 - Education:
 - Stop taking NSAIDS chronically , change medications
 - Treatment:
 - Administer misoprostol
 - Increases the prostaglandins to help build that barrier back up
 - H. Pylori
 - Is a gram negative bacteria that increases the production of acid through Urea
 - Patient will take a breath urea test to assess this.
 - Treatment:
 - Triple therapy
 - Consists of 2 antibiotics + something to help with the acidity, such as a : PPI
 - Duodenal ulcer

MALLORY WEISS:

- This will be a distraction on the NCLEX
- Will see the term:
 - “Blood streaks in the sputum”
- IS NOT A FOA

ESOPHAGEAL CANCER:

- Risk factors:

- Family history
- Smoking
- Alcohol
- GERD
- S/S:
 - Unintentional weight loss
 - Difficulty swallowing
 - Dysphasia
 - Hoarseness
 - Trouble swallowing solids first and then liquids next
 - Bleeding
 - Black tarry stools
 - Chest pain
 - Fatigue

LOWER GI:

CIRRHOSIS:

- **Destruction of the liver**
 - Liver becomes, thick, stiffened, hardened
- **Causes:**
 - Chronic alcohol abuse
 - Infection
 - Hepatitis
- **Patient will develop:**
 - portal HTN
 - Esophageal varices
 - Concerned about hemorrhage
 - Upper GI bleed
- **S/S:**
 - Fatigue
 - Black tarry stools
 - Increased HR
 - Low BP
 - Anemia
 - Pallor
 - Ascites
- **Treatment:**
 - First thing: NPO, IV fluids, pain meds and PPI if needed
 - Second: Administer octreotide
 - Stops the bleeding
 - Third: Balloon Angioplasty, done if they are having esophageal varices and the medication doesn't help stop the bleeding
 - Stops the bleeding

- May feel like they are choking, If so you need to do what?
 - Deflate the balloon
 - Cut the tube

COMPLICATIONS OF CIRRHOSIS:

- Albumin is eliminated
 - Causes patients to move fluid extravascularly causing ascites
 - S/S:
 - Ascites
 - Hard abdomen
 - Edema
 - Low BP
 - Treatment:
 - Paracentesis - removal of fluid
 - Pre-procedure:
 - Have patient empty bladder
 - Put patient in high Fowler's position
 - Removing the fluid will cause patient to become hypovolemic, so to help with this we have to also simultaneously give them:
 - Fluids
 - Albumin
 - To help patient be able to keep the fluid intravascularly
- Ammonia increased d/t liver being unable to rid itself of ammonia
 - Ammonia will cross over the blood brain barrier causing patient to develop:
 - An altered mental status
 - This is how you know it has now entered the brain and is called hepatic encephalopathy
 - So... build up of ammonia will cause AMS in the brain, but in the body you will see Patient having Asterixis (flapping of the hands)
 - **Treatment:**
 - Administer Lactulose
 - Will help get rid of ammonia via bowel movements
 - Will know lactulose is working when you see an **improvement in their mental status**
 - Administer an antibiotic- neomycin
 - This will help kill the bacteria that produces ammonia
- Bilirubin:
 - Broken down parts of the RBCs
 - Broken down into two parts:
 - Heme
 - Bilirubin
 - Once its broken down its considered unconjugated

- The Liver should reconjugate to form RBCs again
 - When the liver is not working you develop a build up of this broken down bilirubin in the body, and will become jaundice (turn yellow)
- With newborns:
 - You can treat the buildup of bilirubin with:
 - UV light treatment
 - Cover their eyes
 - Wear only a diaper
 - No lotions, no barriers
 - Can develop Kernicterus if not treated
 - Bilirubin tested with a heel stick
 - Stick on side of heel
- Clotting factors:
 - II. (Two)
 - V.
 - VII.
 - VIII. (Eight)
 - If you take this clotting factor away Patient develops hemophilia A
 - IX. (Nine)
 - IF you take this away you develop Hemophilia B
 - X.
 - XI.
 - XII.
- Worried about bleeding
 - Educate about bleeding precautions
- Worried about swelling in the joint spaces
- Treatment:
 - Give them their missing clotting factor
- Can give Apixiban (eliquis) to intentionally anticoagulate patients
 - Inhibits clotting factor 10
 - Done for reasons such as:
 - DVT
 - Heart transplants
 - AFIB... Ect...
- Bile Salts:
 - When liver is not working properly these bile salts begin to deposit under the skin causing:
 - Pruritus (itching)
 - Worried about:

- Infection (sepsis)
- Education is very important

DIFFERENTIAL IN THE DIFFERENT QUADRANT PAIN AREAS ON THE ABDOMEN AND WHAT THE PAIN MEANS:

GALLBLADDER:

- Pain in the RUQ and will radiate to the right shoulder
 - Risk Factors:
 - Fat
 - Female
 - Age 40
 - Fertile
 - Fair skin
 - Family history
 - Cholelithiasis
 - Gallbladder stone formation
 - Cholecystitis
 - Gallbladder sac becomes inflamed
 - Causes pain
 - N/V
 - Cholecystectomy
 - Gallbladder is going to have to be removed

APPENDICITIS:

- Pain in the periumbilical region that radiates to the RLQ
- Worried about:
 - Rupture
 - Sign of this is:
 - When patient is no longer complaining of pain
 - Once it ruptures we are worried about sepsis
- Treatment:
 - NPO
 - IV FLuids
 - Pain meds and PPI prn
- Make sure it isn't a possible ectopic pregnancy
 - 17 years old
 - Sexually active
 - RLQ pain

DIVERTICULOSIS:

- Pain in the LLQ
- If it radiates to the LUQ it is indicated perforation
- Common in elderly clients

- Those older than 65
- Risk factors:
 - Age
 - Low fiber diet
 - High consumption of red meat
 - Alcohol
- Patient may eat something specific that doesn't digest easily
 - Such as:
 - Seeds
 - Nuts
 - Popcorn ect...
 - It gets lodged in the outpouching, becomes inflamed and turning diverticulosis into diverticulitis
- Worried about
 - Perforation
 - Peritonitis
 - Sepsis
- Education:
 - High residue, High fiber diet
 - Decrease intake of red meat

ABDOMINAL AORTIC ANEURYSM RUPTURE:

- S/S:
 - Abdominal pain radiating to the back
 - Low BP
 - Decreased HR
 - No pedal pulses

PANCREATITIS:

- Pain in the LLQ, LUQ or periumbilical region pain that radiates to the back
- Causes:
 - Gallstones
 - Alcohol
 - Trauma
- Lab values to look at:
 - Amylase
 - Lipase
- Initial treatment:
 - NPO
 - IV Fluids
 - Pain meds
 - PPI
- Complication:
 - Acute respiratory distress syndrome

- This becomes a FOA
- Can develop within 1-7 days of pancreatitis

PYELONEPHRITIS:

- S/s:
 - Flank pain
 - Fever

NEPHROLITHIASIS: (kidney stones)

- S/S:
 - Flank pain that begins to radiate to the groin

NOTES:

IBD VS IBS:

- **IBS: Irritable bowel syndrome**
 - Bowel is irritated
 - Triggers:
 - Dairy
 - Spicy foods
 - Caffeine
 - Alcohol
 - Gluten
 - Changes in bowel movements
 - Diarrhea
 - Constipation
 - Treatment:
 - Education
 - Not a disease process but your consuming something that's not agreeing with your digestive system
 - Need to eliminate foods slowly, try to figure out what's causing the irritation
 - Then eliminate from diet completely to help with symptoms(irritations)
- **IBD: Inflammation bowel disease**
 - Autoimmune disease
 - Two types:
 - Ulcerative colitis
 - Crohn's disease
 - **Ulcerative Colitis:**
 - Ulcers in the colon
 - S/S:
 - Bloody diarrhea
 - Diet:

- High protein
 - Low residue(fiber) foods
- Medications:
 - Sulfasalazine
 - Helps with inflammation and infection
- Diagnostic:
 - Colonoscopy with biopsy
- **Crohn's disease**
 - Happens anywhere in GI tract
 - S/S:
 - Watery diarrhea
 - Diet:
 - High protein
 - Low residue(fiber) foods
 - Medications:
 - Sulfasalazine
 - Helps with inflammation and infection
 - Educate about photosensitivity and allergy
 - Diagnostic:
 - Endoscopy and biopsy

COLON RECTAL CANCER:

- Risk Factors:
 - Family history
 - Male
- Screening begins at age 50
 - Colonoscopy
 - Fecal occult blood test
- If a patient has a family history they need to be screened 10 years early from when their family member was diagnosed
 - Example: If family member diagnosed at 50, Patient needs to be screened at 40
- S/S:
 - Changes in bowel movements
 - Blood in stool
 - Fatigue/anemia
 - Unintentional weight loss

VITAMINS:

- **Thiamine: AKA Vitamin B1**
 - Used for Wernickes
 - Alcohol intoxication
 - Wernickes:
 - Has receptive/expressive aphasia

- Can reverse by giving Vitamin B1(Thiamine)
- **Niacin: AKA Vitamine B3**
 - Used OTC to decrease cholesterol
 - Can cause a transcutaneous flushing all over the skin
 - Hot., warm flushed feeling
 - Not a anaphylactic reaction, not a FOA
 - Just give NSAIDS and it will go away
- **Pyridoxine: AKA Vitamine B6**
 - Given with isoniazid to prevent peripheral neuropathy
- **FOLIC ACID: AKA Vitamine B9**
 - Used when trying to get pregnancy and while pregnant to prevent Neural tube defects
 - Give 400 to 800 mcg
- **Cobalamin: AKA Vitamine B12**
 - Contained in Meat, fish and poultry
 - Vegans are deficient in Vitamin B12
 - Will see patients begin to develop peripheral neuropathy
 - If they have this just give them an injection and it will fix problem
- **Iron and Vitamin C work together:**
 - When you give iron, take with Vitamin C
 - Helps with absorption
- **If you take Vitamin D also take calcium, they go hand in hand**

MEDICATION:

- **Ondansetron(Zofran)**
 - Antiemetic (nausea medication)
 - Used in patients who are:
 - Pregnant
 - Going through chemo
- **Metoclopramide**
 - Antiemetic (nausea medication)
 - Cause extrapyramidal symptoms

NOTES: MENTAL HEALTH

EGO DEFENSIVES:

- **ACTING OUT:**
 - Person throws a temper tantrum
 - Often seen in children
- **DENIAL:**
 - Not accepting
- **PROJECTION:**
 - A to B
 - Gets mad at something and then yells at another person
- **DISPLACEMENT:**
 - A to B to C
 - Gets mad at something, yells at another person, Then that person yells at someone
- **PASSIVE AGGRESSIVE**
 - When someone is angry at you but doesn't directly confront the person
 - Example:
 - Angry at boss, in return doesn't turn in work on time
- **REGRESSION:**
 - Seen in children who has a new baby born in family
 - May begin to wet the bed
 - Or goes back to "baby talk"
- **SPLITTING**
 - Either I love you or I hate you
 - Never both, has to be one or the other

ABUSE:

- **Child abuse:**
 - How to Identify it:
 - May see hot water burns
 - Fractures
 - Multiple fractures with various stages of healing
 - Shaken baby syndrome
 - Increased ICP
 - Increased head circumference
 - Sun set eyes
 - Irritable
 - Lethargy
 - Bulging fontanelles
 - Ruptured veins
 - Look for a story that doesn't make sense
- **Spouse abuse**

- How to identify it:
 - May see the “abuser” only talking
 - Patient is timid
 - Avoids eye contact
- What do we do in this situation?
 - Separate them
 - Then ask patient:
 - if they feel safe
 - Do they have someone to talk to
 - Do they have a safe place to go
 - Do they have an escape plan
- **Elderly Abuse:**
 - Caregiver neglects them
 - How to identify:
 - Look for poor hygiene
 - Malnutrition
 - Medical condition not under control
 - Bruises under clothes
 - What do we do?
 - Separate from caregiver
 - Get social worker involved

ADHD:

- Unable to pay attention
- Hyperactive
- Teachers are the ones who often identify this first
- These kids often have low self esteem
- Treatment:
 - Drugs: administer stimulants
 - Methylphenidate
 - D-amphetamine
- What are we worried about with stimulants: ?
 - Growth and development
 - Appetite
 - BMI
 - Blood pressure, HR
 - Sleeping habits
 - Suppresses appetite:
 - Make sure they eat before they take this medication
 - Don't take after 6pm

AUTISM SPECTRUM DISORDER:

- Educate the parents:

- Not d/t vaccines
- They like to be isolated
- Don't like loud noises
- Keep away from nursing station

DELIRIUM VS DEMENTIA:

- **Delirium:**
 - Acute onset of AMS
 - There normal and then suddenly mental status changes
 - FOA: AMS
 - Cause:
 - Infection
 - Trauma
 - Substance abuse/withdrawal
 - Metabolic or electrolyte imbalances
 - Malignancy
 - Hemorrhaging
 - Treatment:
 - It is reversible
 - Treat the underlying cause
- **Dementia:**
 - Gradual onset of AMS
 - Over months/years
 - This is irreversible
 - Alzheimer's

PSYCHOSIS:

- This is delusions, hallucinations, disorganized thought/speech
- Patients don't make sense when you talk to them
- First thing you do if person comes in with a psychosis:
 - Do a drug screen
 - Rule out other non psychotic causes
- If other causes ruled out, then look into things like schizophrenia
- Schizophrenia:
 - Presents in the 20s
 - Congenital
 - More common in males
 - **These patients can relate to reality**
 - You have positive and negative symptoms:
 - Positive symptoms:
 - Delusions
 - Hallucinations
 - Disorganized speech/thought process

- Negative symptoms:
 - Flat affect
 - Asocial
 - Anhedonia
 - Lose of interest
 - These have a poor prognosis
 - Don't know how to take care of self
 - More likely to commit suicide
- How to deal with these patients?
 - Ask them what it is
 - What are they seeing/hearing
 - Need to make sure its not something harmful that they are hearing/seeing
 - Acknowledge it: build the trust
 - Present reality
 - Example:
 - I know you're seeing this, but it's not really there
 - Can administer an antipsychotic medication
 - Haloperidol
 - Also a Benzo
 - Lorazepam
 - If they are having an active psychosis, you can give them:
 - Will help them calm down
 - Antipsychotic
 - Haloperidol
 - Plus a benzo:
 - Lorazepam
 - Plus Diphenhydramine

ANTIPSYCHOTIC MEDICATION:

- Haloperidol
 - Clozapine
 - Is the best psychotic out there
 - Don't use it a lot d/t SE:
 - Agranulocytosis
 - Decrease production of WBC
 - Increases risk of infection
 - On boards look for someone:
 - Sore throat
 - Fever
 - UTI
 - Ect..
- Olanzapine
 - Can cause major weights gain

- Educate:
 - On weight gain
 - Diet
 - Exercise
- **Ziprasidone**
 - Worried about:
 - QT prolongation
 - Concerned with VFIB
- **Can cause Extrapyramidal symptoms:**
 - Acute dystonia
 - Movement disorder
 - Happens within 4 hours
 - Akathisia
 - Inability to relax, sit still
 - Happens within 4 days
 - Parkinsonian
 - Shuffle gait
 - Pill rolling
 - Lip smacking
 - Happens within 4 weeks
 - Tardive dyskinesia
 - Very slow in their movement
 - Everything is slowed down
 - Happens with 4 months

BIPOLAR DISORDER:

- S/S: Mnemonic **“DIG FAST”**
 - **D**= Distractibility
 - **I**= Impulsiveness
 - **G**= Grandiosity
 - **F**= Flight of ideas
 - **A**= Agitation/ Anger
 - **S**= Decrease need for sleep
 - **T**= Talkativeness
- **Treatment:**
 - Administer Lithium
 - Therapeutic level = 0.6 to 1.2
 - Toxic level = >1.5
 - S/S:
 - Presents first as GI issues:
 - N/V

- Movement disorders
 - Hyporeflexia
 - Ataxia
- Nephrogenic Diabetes Insipidus
- Hypothyroidism
- Pregnancy is contraindicated

MAJOR DEPRESSIVE DISORDER:

- S/S:
 - Sleep
 - Interest
 - This one has to be a symptom to be able to be diagnosed
 - Guilt/Aggression
 - Energy decreased
 - Concentration decreased
 - Appetite can be either decreased or increased
 - Psychomotor retardation
 - Suicidal ideation
- Treatment:
 - Your gonna start with therapy and then move to medications
 - First thing:
 - Cognitive behavioral therapy
 - Second thing:
 - Medications:
 - SSRIs: first line drug choice
 - Drugs:
 - Citalopram
 - Escitalopram
 - Sertraline
 - Fluoxetine
 - Worried about:
 - Serotonin syndrome
 - MAOIs, TCA: if taken with SSRIs will put patient into serotonin syndrome
 - If you are gonna switch their medication you need to give them 10 to 14 days to let the SSRIs get out of their system
 - Want to avoid St. John's Wort
 - S/S:
 - Everything becomes HYPER
 - Treatment:
 - Cyproheptadine
 - Education:

- Takes 4 to 6 wks to work
 - Can cause weight gain
 - Can cause sexual dysfunction
 - Decreased libido
 - Don't abruptly stop
 - Need to be tapered off
 - Watch for suicidal ideation
 - May be described as a patient comes in saying "I still feel depressed, but have more energy"
- **MAOIS:**
 - Drugs:
 - Phenelzine
 - Selegiline
 - Isocarboxazid
 - Worried about:
 - Interaction with other drugs
 - Be careful of intake of tyramine:
 - Wine
 - Cheese
 - Processed meats
 - If tyramine is consumed you will develop Hypertensive crisis
 - Treatment: Phentolamine
- **Tricyclics antidepressants:**
 - Drugs:
 - Amitriptyline
 - These can be used for fibromyalgia
 - Nortriptyline
 - Can also be used for nocturnal enuresis
 - Imipramine
 - Know that these can be cardiotoxic
- **ELECTROCONVULSIVE THERAPY:**
 - Used when someone has treatment resistant depression
 - When pharmacology is not working
 - When brain isn't functioning properly, it shock it causing:
 - A grand mal seizure
 - Do not give an antiseizure medication prior to therapy
 - Do not give a benzo prior to therapy
 - They go under general anesthesia with a muscle relaxant
 - Post procedure:
 - Will be:
 - Disoriented
 - Retrograde amnesia

- Temporary headache

SUICIDE:

- Risks:
 - Sex
 - Male
 - Age
 - Young/adolescent
 - Elderly
 - Depression
 - Previous attempt
 - ETOH/ substance abuse
 - Rational thinking loss
 - Sickness
 - Terminal
 - Organized plan
 - No spouse or support system
 - Stated future intent

ANXIETY/PHOBIAS:

- **Social anxiety**
 - Anxiety being around people or going to a party
 - Treatment:
 - Therapy
- **Agoraphobia**
 - They don't like closed spaces
 - Don't like trains, buses
 - May not like open spaces
 - Treatment:
 - Therapy
- **Generalized anxiety**
 - Someone who is constantly anxious but does not know why
 - Treatment:
 - Therapy
- **Other treatment options for above phobias:**
 - First Line option:
 - SSRIs
 - Second:
 - Buspirone
 - Antianxiolytic
 - Takes 2 weeks to start working

- Third:
 - Benzos
 - Fast acting

PTSD:

- Need to identify the trauma
- Identify triggers: mnemonic: “**HARD**”
 - Hyperarousal
 - Avoid stimuli
 - Reexperiencing
 - Distress

ANOREXIA:

- Someone who is not but thinks that they are obese
- Results in patient becoming:
 - Severely underweight and malnutrition
 - BMI: <18.5
- Have a fear of weight gain and a distorted body image
- They will restrict their caloric intake
- Worried about:
 - Malnutrition
 - Electrolyte imbalance
- Will be hospitalized against their will
- Monitor while they eat
- Weight them daily
- Have them keep a journal
- Don't allow them to go to bathroom after eating
- Treatment:
 - First: Therapy
 - Second: SSRIs

BULIMIA:

- These patients can be under or overweight
- They will have a binge/purge and eat a lot, then go to bathroom and vomit
- Will see:
 - See erosions on their fingers
 - Teeth will be eroded
- Treatment:
 - First: Therapy
 - Second: SSRIs

PERSONALITY DISORDERS:

- **Paranoid personality disorder**
 - Person does not trust ANYTHING
 - Suspicious of other
- **Borderline personality disorder**
 - Unstable mood
- **Antisocial**
 - Against society
 - Murders
 - Rapist
 - Before the age of 18 its called
 - Conduct disorder
 - These are your sociopaths
- **Histrionic:**
 - Attention seeking
 - Sexually provocative
- **Narcissistic:**
 - I'm the best
 - I'm always right
- **Dependent:**
 - They need to be with someone all the time
 - Can't do anything alone
 - Always need to be around others, friends/family

SUBSTANCE ABUSE:

- **Alcohol: ETOH**
 - **Intoxication:**
 - Worried about Wernickes, if they come in with this give them:
 - IV fluids
 - Multivitamin, magnesium
 - Thiamine B1
 - **Withdraws: (Alcoholic)**
 - Between 24-72 hours patients will develop delirium tremens
 - Delirium tremens:
 - Seizures
 - Treatment:
 - Administer Benzos
 - Lorazepam
- **BENZOS:**
 - **Intoxication:**
 - Worried about what?
 - Patient going into respiratory depression (decreased respirations)

- Antidote:
 - Administer Flumazenil
 - **Withdraws:**
 - Worried about what?
 - Seizures
 - Treatment:
 - Give them the Benzo and then taper them off
 - Don't abruptly stop
- **OPIODS:**
 - **Intoxication:**
 - Worried about what?
 - Patient going into respiratory depression (decreased respirations)
 - Antidote:
 - Administer Naloxone (Narcan)
 - Half life: 20-40mins
 - So when it starts to wear off administer narcan again
 - If it doesn't work, intubate
 - **Withdraw:**
 - Everything will increase
 - Sweating
 - Irritated
 - Increased bowel movements, etc...

NEUROLEPTIC MALIGNANT SYNDROME VS. MALIGNANT HYPERTHERMIA:

- They both present the same way
 - AMS
 - High Fevers
 - 104-105
 - Muscle rigidity
- The treatment is the same for both
 - Dantrolene
- **Causes** are different:
 - **Neuroleptic malignant syndrome:**
 - Acute reaction to antipsychotics
 - **Malignant Hyperthermia:**
 - Anesthesia
 - It is congenital
 - Ask before going into surgery if anyone in family has had an adverse reaction to anesthesia

RESPIRATORY: PEDIATRICS

EPIGLOTTITIS:

- The epiglottis is inflamed
- Cause:
 - Haemophilus Influenza B
 - There is a vaccine for this so it can be avoided
- Will be in severe respiratory distress
- Make sure you keep a trach tube at bedside
- FOA: Airway
- **S/S:**
 - Drooling
 - Stridor
 - Use of accessory muscles
- **Treatment:**
 - Put in tripod position
 - Prepare for intubation
 - If you can't intubate, prepare for a Tracheostomy
 - Administer Ceftriaxone

BRONCHITIS:

- Inflammation in the bronchioles
 - Commonly caused by RSV
- **S/S:**
 - Crackles
 - Wheezing
 - Elevated Lymphocytes
- **Treatment:**
 - Is a viral infection so remember antibiotics cant treat this
 - Need to give supportive care
 - Control fevers
 - Fluids
 - Rest
 - Drainage, suction
 - Positional changes
 - Breathing treatments
- **PERTUSSIS: AKA whooping cough**
 - Can give a vaccine to prevent this
 - Worried about close contact with patient

- Treat family members and patient with Erythromycin
- CROUP: Laryngotracheitis
 - Larynx and trachea are inflamed
 - FOA: Airway
 - Caused by parainfluenza virus
 - Can't give antibiotics its a viral infection
 - S/S:
 - Seal bark like cough
 - Treatment:
 - Administer steroids
 - Help to decrease inflammation
 - Give via IM
 - Administer inhaled epinephrine
 - Via nebulizer
 - Help with inflammation
- PERITONSILLAR ABSCESS:
 - Developed abscess next to tonsils
 - If grows can cause airway obstruction
 - S/S:
 - Muffled voice
 - High fever
 - Deviated tonsil
 - Treatment:
 - Incision and drainage to abscess
 - Administer antibiotics

ALLERGIES:

- Super high yield drugs that you can use to treat people that have allergies, these include:
 - Antihistamines
 - Two types:
 - First generation:
 - Diphenhydramine (Benadryl)
 - Chlorpheniramine
 - These drugs can also cause:
 - A sedative effect
 - Educate about safety
 - Don't operate heavy machinery
 - Don't take it in the morning, ect...
 - Can also cause an anticholinergic effect
 - Cause urinary retention
 - Seen in elderly
 - Second generation:

- Cetirizine
- Loratadine
- Fexofenadine
- These don't cause a sedative effect

*****For the boards, cough suppressant and antidiarrheals are not something we want to pick for an answer. We don't want patients to use these******

CYSTIC FIBROSIS: Respiratory

- Lungs are affected
- Treatment:
 - Chest physiotherapy- helps get rid of mucous plugs
 - Positional changes
 - Vibration
 - Cupping
 - Perform in the morning
 - If need to be performed during the day, try to do before they eat, don't want them to aspirate
 - PRN= if oxygen goes down, having trouble breathing
 - Do again at bedtime
- If Chest physiotherapy does not do the job put them in a High frequency chest wall oscillator
 - Perform in the morning
 - If need to be performed during the day, try to do before they eat, don't want them to aspirate
 - PRN= if oxygen goes down, having trouble breathing
 - Do again at bedtime
- Administer n-acetylcysteine
 - Is a mucolytic, helps thin the secretions
 - Side note: Can also can be given for a acetaminophen overdose

ADULT RESPIRATORY:

OBSTRUCTIVE LUNG(pulmonary) DISEASES:

- There is an obstruction that is occurring
- There can be chronic obstructive pulmonary disease(COPD)- a broad term
 - Two types that make it chronic:
 - **Chronic bronchitis**
 - Chronic inflammation of the bronchial
 - Treatment:
 - Lifelong steroid use

- Which can lead to cushing's disease
- **Emphysema**- typically the one people are talking about when they say COPD
 - Destruction of the alveoli
 - Cause:
 - Smoking
 - S/S:
 - Decreased oxygen
 - 90% normal
 - Elevated CO2
 - Leads to respiratory acidosis
 - Treatment:
 - Oxygen
 - Educate about oxygen use
 - Highly flammable, don't smoke while using oxygen

****If any one comes in with “Singd Facial Hair” This is AIRWAY, AIRWAY, AIRWAY****

NON CHRONIC LUNG DISEASE:

- **ASTHMA:**
 - Can be a chronic condition, but your not always having that bronchoconstriction
 - Triggers:
 - Allergens
 - Stress
 - Cold weather
 - Anxiety
 - Infection
 - Upper respiratory infection
 - S/S: of an exacerbation, compromised airway
 - SPO2 drops to 90%
 - Wheezing
 - Use of accessory muscles
 - **Treatment:**
 - Drugs:
 - **Administer SABA- reflexes bronchioles**
 - Albuterol
 - A rescue inhaler medication, helps open airway
 - S/S:
 - Tremors
 - Increased HR

- Insomnia
 - Worried about patient developing “Silent Chest”
 - When a patient suddenly stops wheezing
- **Administer Inhaled corticosteroids**
 - If inflammation is occurring
 - Drugs:
 - Budesonide
 - Fluticasone
 - Beclomethasone
 - Education on proper use:
 - Use a spacer
 - Rinse mouth afterwards
 - If you don't, can cause candidiasis
 - If patient develops candidiasis administer Nystatin
 - Swish and swallow medication
 - Soak dentures if they have them
- **Administer a LAMA: for constriction**
 - Want to prevent bronchoconstriction
 - Drugs include:
 - Ipratropium
 - Tiotropium
- If they come in with an exacerbation we administer a small volume nebulizer:
 - A breathing treatment
 - Can put all 3 above medications in the nebulizer
- **Long term control of asthma:**
 - Give a Long term beta agonist (LABA) + an inhaled corticosteroid
 - Helps keep bronchioles relaxed long term
 - Drugs: LABA
 - Salmeterol
 - Formoterol
- **Medications for exercise induced asthma:**
 - Antileukotrienes
 - Montelukast
 - Zafirlukast
- **Theophylline**
 - Used to be used for asthma
 - Is a very lethal drugs
 - Therapeutic range = 10 to 20
 - If it goes outside this range patient will develop neuro/cardio toxicity

RESTRICTIVE LUNG DISEASES:

- Risk for:
 - People who work in sand blasts, coal mines, nuclear test sites, ect...
- Patients lungs become restrictive overtime d/t particles they were exposed to over a period of time
- Lung becomes fibrosed, thick
- S/S:
 - Decrease O2
 - SOB
- Treatment:
 - Administer Amiodarone
 - Administer oxygen
 - Will eventually need a transplant
 - Education:
 - Lifelong immunosuppressants
 - Puts patient at risk for infection
 - Educated on ways to decrease risk of infection
- Will become a FOA:
 - Sepsis
 - Hemorrhage

PULMONARY EMBOLI:

- Causes: Not only caused by a DVT, but also can be caused by the following:
 - F- Fat Emboli
 - Caused from a fracture to a long bone
 - A- Amniotic fluid Emboli
 - Stays in blood during delivery of child
 - T- Thrombus Emboli
 - Cause:
 - When we form a clot
 - B- Bacteria Emboli
 - Cause:
 - Most common: IV drug users
 - A- Air Emboli
 - Cause:
 - Central line
 - T- Tumor Emboli
- Watch for these signs: Can indicate a pulmonary embolism
 - Chest Pain
 - Decreased o2

- Increased HR
- Increased RR
- Low grade fever
- During a pulmonary embolism
 - Oxygen is prevented from coming in and CO2 is coming out
 - Increased CO2
 - Decreased O2

ARDS:

- Caused from the destruction of the alveoli
- Causes:
 - Sepsis
 - Aspiration
 - Pneumonia
 - Trauma
 - Pancreatitis
- Will develop respiratory distress within 1-7 days
- Treatment:
 - Treat underlying cause

PNEUMONIA:

- Will be a distraction on boards
- Becomes a FOA, if leads to ARDS

ATELECTASIS:

- Patients develop fluid in the lungs
- Cause:
 - Not using incentive spirometer
- Patient can then develop hospital acquired pneumonia which then can lead to ARDS

OBSTRUCTIVE SLEEP APNEA:

- Some obstruction that is causing patient to stop breathing during sleep
- Causes:
 - Anatomical obstruction
 - Treatment:
 - Give them a CPAP machine
 - If that doesn't help, surgery is needed
 - Obesity
 - Education:
 - Diet

- Exercise
- Lose weight
- Can give a CPAP machine

PLEURAL EFFUSION:

- Causes:
 - Cirrhosis
 - Trauma
 - Infection
- Need to get rid of the fluid
- Patient will sound: Dull
- Treatment:
 - Thoracentesis
 - Complication:
 - Pneumothorax

PNEUMOTHORAX:

- Patient will sound: Hyperresonant
 - Causes:
 - Rib fracture
 - Lung punctures
 - Emphysema
 - Barotrauma
 - Lung biopsy, procedures
 - FOA: Tension pneumothorax
 - Trachea can deviate causing pressure on the heart.
 - Don't have a lot of time, need to treat it
 - Treatment:
 - Needle decompression
 - Chest tube

LUNG CANCER:

- Risk factors:
 - Smoking
 - Family history
 - Asbestos
- S/S:
 - Cough
 - Hemoptysis
 - Wheezing
 - Coin like lesion
 - Unintentional weight loss

SMALL CELL LUNG CANCER

- Associated with SIADH and cushings disease

DEXTROMETHORPHAN:

- Is a cough suppressant
- If they overdose on this administer Naloxone

PSEUDOEPHEDRINE/ PHENYLEPHRINE:

- Is a Nasal decongestant
- Side effect:
 - HTN
 - Have them stop taking this medication

NOTES:

NEUROLOGY PEDIATRICS:

NEURAL TUBE DEFECTS:

- These are birth defects of the brain, spine, or spinal cord that happen in the first month of pregnancy.
- Most common type:
 - Spina Bifida

SPINA BIFIDA:

- CAUSES:
 - Lack of folic acid
- S/S:
 - Abnormal Tuft of hair on spine
 - Dimples
 - Fluid filled Sac
- FOA:
 - Altered mental status
 - Sepsis
- **Treatment**
 - **Cover with Sterile gauze**
 - **Surgery**
- Mother can get a quad screening done between 16-18 weeks
 - Tests the Alpha fetoprotein
- 400 to 800 mcg is the amount of folic acid (AKA B9) you need to be taking
- Contraindications: Phenytoin

- If mother is taking phenytoin you want to take them off of it and double their daily intake of folic acid.
- Normal = 400 - 800
- Double = 800 - 1600
- Nutrition (foods that help decrease risk of neural tube defects)
 - Want mother to take folic acid
 - Increase intake of greens
 - Have them eat fortified cereals

BACTERIAL MENINGITIS:

- Causes:
 - Group b strep
 - Haemophilus influenza B
- S/S:
 - High pitched cry
 - Poor feeds, vomiting
 - Frequent seizures
 - Nuchal rigidity
 - Fever
 - Irritability, lethargy
 - Bulging fontanelle
 - Sun set eyes
- Posterior fontanelle closes:
 - 2-3 months old
- Anterior fontanelle closes:
 - 18 months
- **TREATMENT: (in order)**
 - Put these patients on droplet precautions
 - IV fluids
 - Labs/cultures
 - Antibiotics need to be given within 30 minutes of admin.
 - Get a CT scan
 - Then do a Lumbar puncture
 - Position for LP:
 - Fetal position
 - Lie on your side with your knees drawn up to chest
- **INTERVENTIONS:**
 - Elevate HOB 30 degrees
 - Dim lights
 - Keep room temps cool
 - Implement seizure precautions
 - Droplet precautions

SEIZURES:

Two types to know:

- Absence seizures
- Tonic clonic

ABSENCE SEIZURES:

- Occurs in pediatric patients
- They don't lose consciousness
- Children will often be described as “staring into space” or “Daydreaming”, but can't be “snapped” out of it.
- It can go unnoticed by others d/t it being short and the child not noticing.
- After it's over they just go back to what they were doing.
- Duration:
 - Very short, seconds

TREATMENT:

- EEG (assess brain activity)
 - Teach parents to wash the children's hair before
 - It's a Painless procedure
 - Don't administer any anti-seizure medications like Benzos before procedure, can mess with results of test
 - No caffeine products 8 hour prior to procedure
 - You can eat before
- Give Ethosuximide(Anticonvulsant medication)
 - Side Effects:
 - Fatigue
 - GI distress
 - Headache
 - Itching
 - Johnson syndrome (Steven Johnson syndrome)
- Implement seizure precautions

TONIC CLONIC: (MORE DANGEROUS ONE)

- Patients may experience a aura(warning a seizure is about to happen)
- They will have a loss of consciousness
- Lasts no more than 3 minutes
- Post seizure:
 - Feel very fatigued
 - Don't remember seizure
 - Extremely sore from jerking
- Implement Seizure Precautions
- **TREATMENT:**
 - Lorazepam
 - Is rapid acting
 - Give via IV(preferred), but if no IV access you can give it suppository

- Monitor liver function
- Antidote: Flumazenil

SEIZURE PRECAUTIONS:

- Establish an IV access(to give anti-seizure medication if needed)
- Padded side rails
- Have oxygen and suction at bedside
- Protect their head(put pillow under head)
- Bed in lowest position
- Remove any restrictive clothing or items the patient may be wearing.

Example: Eye glasses

INTERVENTIONS DURING A SEIZURE:

- GOAL: Safety, protect the patient
- NEVER PUT ANYTHING IN MOUTH
- No restraints
- Place patient on side
- Remove restrictive clothing or items that can break
- Very important to note the time the seizure started and the time it stopped
 - If greater than 5 minutes or another seizure begins, think Status epilepticus.
- Make sure to note their behavior before and during seizure

INTERVENTIONS POST SEIZURE:

- Assess patient
 - LOC
 - Vital signs
 - Injuries
- Maintain airway
- Clean patient if they were incontinent
- Document
- Notify HCP

ADULT NEUROLOGY:

CRANIAL NERVES:

- 1- Smell
- 2 -Vision
- 3- helps with movement of eyes, adjusts pupils
- 5- Trigeminal
- 7- Facial
- 9- Glossopharyngeal (Gag reflex)

CRANIAL NERVE 5: TRIGEMINAL:

- Largest of the cranial nerves

- Responsible for moving facial muscles by chewing and facial sensations
- S/S:
 - Patients will present with a severe stabbing pain
 - Spontaneous attacks of pain triggered by:
 - touch, pressure
 - Chewing
 - Extreme Temperature
 - Brushing teeth
 - Avoid extreme temperatures
- **TREATMENT:**
 - Carbamazepine
 - Monitor CBC, specifically a decrease in WBC
 - Biggest side effect is infection
 - Watch and follow up on any s/s of infection

CRANIAL NERVE 7: **FACIAL**

- This produces tears, forms facial expressions
- Damage to this nerve can cause facial paralysis
- Bell's Palsy
 - S/S:
 - Unilateral facial droop
 - Drooling
 - Increased tearing
 - Painful sensations behind face ,ear, and eye
 - Difficulties with speech and eating on the affected side
- **TREATMENT:**
 - GOAL: To maintain facial muscle tone
 - Administer Corticosteroids
 - Prednisone
 - Can give analgesic to help with facial pain
- **EDUCATION:**
 - Should see it clear up with complete recovery within a couple months (2 to 8 weeks)
 - Teach eye care
 - Cover with patch at night
 - Apply eye lubrication
 - Exercises to help with maintain muscle tone
 - Facial exercises
 - Avoid exposing face to cold or drafts
 - Chew on the unaffected side of mouth
 - Eliminate hot foods & hot fluids
 - Frequent mouth care

CRANIAL NERVE 9 : **GLOSSOPHARYNGEAL:**

- Function: Swallowing
- They will lose $\frac{1}{3}$ posterior of the tongue and the pharynx
- Effects patient's gag reflex
- FOA: Airway
- Have patient perform a swallow test
 - Watching for aspiration

BRAIN LESIONS:

FRONTAL LOBE:

- This is your emotions, personality
- Executive function
- Damage to this lobe causes behavior changes
- Also where your Broca area is located
- **BROCA APHASIA**
 - Have broken speech
 - They can understand you, but can't respond as well
 - Speech often consists of short limited phrases that make sense but often forget the smaller words in sentences ("and" , "Is" , "the")
 - They are aware of their deficit and tend to get very frustrating
 - Interventions:
 - Limit your questions
 - Use pictures
 - Ask yes or no questions

OCCIPITAL LOBE:

- Function: Vision
- Injury to this lobe: causes vision deficits
- Contrecoup head injury
 - Causes:
 - During trauma from a motor vehicle accident
 - Shaken baby syndrome
 - Vision is injured
 - Have Broca aphasia

TEMPORAL LOBE:

- Injury to this lobe can cause:
 - Clients to not understand verbal or written word
- This is where the Wernickes is located
- Poor thiamine intake can lead to Wernicke's encephalopathy
 - A serious complication that manifests as:
 - AMS
 - Oculomotor dysfunction
 - Ataxia
 - Can give thiamine to help with this

- Patients with chronic alcohol abuse are prescribed thiamine to help prevent this condition
- If a patient comes in with alcohol intoxication, IV thiamine is given before or with IV glucose to prevent Wernicke's encephalopathy
- **WERNICKES**
 - Gonna have "Word Salad"
 - They have no comprehension of what we are saying and we can't understand them.
 - Can't comprehend spoken/written word
 - Exhibit a long, but meaningless speech pattern
 - Alternative communication interventions:
 - Visual aids
 - Hand gestures
 - Speak clearly
 - Ask "yes" or "No" questions

PARIETAL LOBE:

- Damage to this lobe can cause a deficit with sensation
 - Example: inability to recognize being touched
- Controls sensory input:
 - Touch
 - Pain
 - Sensory
 - Hot - cold

GLASGOW COMA SCALE:

- Assesses patients LOC by measuring:
 - Eye opening(alertness)
 - Verbal response (orientation)
 - Motor response (obeying a command)
- Score: 3 to 15
 - Mild: 13 -15
 - Moderate: 9-12
 - Severe: less than 8
 - Maximum score 15(fully alert person)
 - Lowest score 3
- Just remember:
 - "8 need to intubated"
 - "4 they hit the floor"
- GCS score of 8 or lower is classified as a coma- need to intubated

STROKES:

- Two types:

- Ischemic stroke (thrombolytic)
- Hemorrhagic stroke (Embolus)
- **THROMBOTIC: AKA Ischemic**
 - Forms right in the brain
 - Ischemic attack = blocks blood to the brain
- **EMBOLUS: AKA Hemorrhagic**
 - Formed somewhere else in the body and traveled up to the brain
 - Different types of embolus:
 - Fat
 - Air
 - Thrombus
 - Bacteria
 - Amniotic Fluid
 - Tumor

TREATMENT:

- Prepare client for a CT to rule out hemorrhagic stroke
- Insert 2 large bore IV lines
- Administer TPA within 3 to 4 ½ hours of onset of symptoms for full effectiveness.
 - TPA drugs: end in -plase
 - TPA dissolves clots and restores perfusion in clients with ischemic strokes
 - Nurse must assess for contraindications to tPA before administering
 - Contraindicated in patients:
 - Prior intracranial hemorrhage
 - Has had a ischemic stroke within the last 3 months
 - Recent surgery
 - History of a Hemorrhage stroke
 - If they have any risk of bleeding or are actively bleeding
 - Any significant head trauma within last 3 months
 - Recent use of warfarin
 - Can safely receive tPA if warfarin was discontinued 4 weeks prior

INTRACRANIAL HEMORRHAGE:

- Two most important types:
 - **Epidural Hematoma:**
 - Occurs in temporal region
 - Often will lose loss of consciousness but then regain it
 - They are talking to you and seem normal but they are about to rapidly decline!!
 - Actively bleeding in their brain
 - TREATMENT:
 - Take them to get a CT scan

- Craniotomy
- **Subarachnoid hematoma:**
 - You will see patients describe it as “worst headache of my life”
 - Cause:
 - Ruptured aneurysm (bleeding in brain)

HEADACHES:

- Three types to know:
 - **Cluster headache:**
 - Unilateral
 - Lasts about 15min- 3 hours
 - Presents as eye pain
 - Treatment:
 - Sumatriptan
 - **Tension**
 - Bilateral pain
 - Lasts 30 min to 4/6 hours
 - Presents as a tight headband feeling
 - Treatment:
 - NSAIDS or acetaminophen
 - **Migraine**
 - Unilateral pain
 - Lasts between 4-72 hours
 - Patients describe pain as having:
 - Photophobia
 - Photophobia
 - Debilitating
 - N/V
 - Treatment
 - Sumatriptan
 - Acetaminophen
 - NSAIDS
 - Can give a Beta Blocker as a prophylactic medication (those who are prone to migraines)
 - Propranolol

MOVEMENT DISORDERS:

- **Chorea**
 - Cause dancing movements
 - Helpful tip: remember as choreography
 - Seen in those with Huntington’s disease
 - **HUNTINGTON'S DISEASE:**
 - S/S:
 - Sudden jerky movements

- This is an autosomal dominant disorder
 - One parent has to carry the gene
 - Meaning: 1 out of 2 of their offspring will have this.
- Disease progresses after with each generation
 - S/S will begin to present itself sooner in life(age) with each generation
 - Meaning:
 - Normal onset is 30-50 years old
 - If they present signs at 50 years old their child may present signs earlier at 40 years old.

Parkinson's disease:

- Caused by a decrease in dopamine
 - Is a neurotransmitter
 - Affects people's mood
- Resting Tremors
 - "Pill rolling"
- S/S:
 - "Pill rolling"
 - Shuffling gait
 - Depression, mood swings
 - Masked facial expressions
 - Postural instability
 - Rigid movements
 - Hallucinations
 - Stooped posture, forward tilt of trunk
 - Flexed elbows and wrists
- Treatment:
 - Carbidopa-levodopa
 - Helps increase the dopamine and alleviates the symptoms
 - Educate to avoid B6 vitamins and eat a low protein diet
- Education:
 - Safety precautions:
 - How to use a walker

Alzheimer's:

- Most common form of dementia
- We can only manage these symptoms
- 3 levels:
 - Mild:
 - They forget that they ate
 - Intervention:
 - Give ½ meal, then later give the other half
 - Moderate:
 - They forget to eat

- Late:
 - They don't want to eat
- **Treatment:**
 - Goal: is to slow the progression of the disease
 - Administer:
 - Memantine
 - Donepezil
- Education for the caregivers:
 - Concerned about safety, wandering
 - Wandering
 - Keep the locks out of sight
 - Door alarms
 - Disguise the door
 - Speaking to client
 - Face the client while speaking
 - Turn off the television and close the door
 - Use simple statements and questions
 - Maintain a quiet environment to limit distracting stimuli

MULTIPLE SCLEROSIS:

- This is an autoimmune disease
- Body destroys the nerves
- S/S:
 - Sight begins to deteriorate
 - Bladder Incontinence
 - Speech, gait, muscle movements begin to deteriorate
 - Symptoms get worse in the:
 - heat(summer)
 - Hot baths
 - Times of stress
- Treatment:
 - Immunosuppressants:
 - Methotrexate
 - Cyclosporine
 - Azathioprine
 - Education:
 - Need to watch for s/s of infection
 - Safety

AMYOTROPHIC LATERAL SCLEROSIS (ALS):

- There is no cure, everything shuts down
- Patients will slowly become wheelchair bound
- Their mind always stays intact
- They often die d/t:

- Aspiration
- Respiratory failure
- Treatment:
 - Goal: Slow progression
 - Administer drug: Riluzole

OPHTHALMOLOGY:

Conjunctivitis:

- Pink eye
- There are 3 different types:
 - Viral
 - Treatment:
 - Administer antihistamine drops
 - Supportive care
 - Allergy
 - Treatment:
 - Administer antihistamine drops
 - Supportive care
 - Bacterial
 - In the morning, patients can't open their eyes., they will be crusted
 - Treatment:
 - Wipe with a warm cloth from inner to outer
 - Administer antibiotics drops
 - Put them in BOTH eyes
 - How to install eye drops

● Hyperopia:

- Can see far away, but not up close

● Myopia:

- Can't see far away, only up close

● Cataract:

- Patients complain of:
 - blurred vision
 - Glare at night
 - Decreased night vision
- Treatment:
 - Surgery
 - 3 days prior to surgery, they will be prescribed:
 - Antibiotics & Steroid drops that they need to start taking
 - Postop:
 - Cover eye with patch
 - No strenuous activity
 - Avoid sunlight
 - Avoid Heat: cooking
 - Sleep on unaffected side for first 48 hours
 - REPORT ANY "FLOATERS" or flashing lights

● Glaucoma:

- Closed Angle Glaucoma:
 - S/S:
 - Sudden pain
 - Halos
 - Increased Intraocular pressure
 - DO NOT GIVE ANTICHOLINERGICS
 - Treatment:
 - Surgery to relieve the ocular pressure
- **Retinal Detachment:**
 - Is painless
 - Cause:
 - Trauma
 - S/S:
 - Patients will describe it as “curtain fell over my eyes”
 - Floaters
 - Lines
 - Sudden flashes of light
 - Treatment:
 - Surgery to reattach it
 - If not promptly recognized and treated, permanent blindness may occur
 - Post Op education:
 - For next 14 days patients use lie prone
 - Can get up for 10 mins every hour

PHARMACOLOGY:

- **Gabapentin:**
 - Given for peripheral neuropathy
- **Lamotrigine:**
 - Given for seizures
- **Levetiracetam:**
 - Given for seizures
- **Phenytoin:**
 - Given for Seizures
 - Normal range is 10-20
 - Less than 10: worried about them having seizures
 - More than 20: Worried about them having neurotoxicity
 - Watch for vision changes and Altered mental status
 - Side effect:
 - Can cause gingival hyperplasia
 - Remind about good oral hygiene

ENDOCRINE:

PEDIATRICS:

DIABETES:

- Type 1 diabetes is diagnosed when their children, so education is very important
 - Most important to educate about hypoglycemia, how to identify it and how to treat it.
 - S/S:
 - Tremor
 - N/V
 - Lightheadedness
 - Cold. Clammy, pale
 - Causes:
 - Maybe didn't eat
 - Maybe took too much insulin
 - Treatment:
 - Give them simple carbs, 15 gram of sugar
 - Fruit juice
 - Soda
 - Hard candy
 - Educate parents and children
 - Let children choose injection site
 - Let them choose and clean a finger for blood glucose
 - Let them inject the insulin
 - Have them identify 2-3 s/s of hypoglycemia
 - Educate parents on nutrition

ADULT ENDOCRINE:

- **Cushing's disease:**
 - Adrenal glands:
 - They sit On top of kidney
 - It produces:
 - Salt(aldosterone)
 - Sugar (Cortisol)
 - Sex (estrogen and testosterone)
 - Cause:
 - Too much cortisol will cause cushing's disease
 - Excess corticosteroid production
 - Primary:
 - Tumor on adrenal gland
 - Causes:
 - Increase in cortisol
 - Decrease of ACTH

- Secondary:
 - Tumor on the pituitary gland
 - Causes:
 - Increased ACTH
 - Increased cortisol
- Exogenous:
 - Caused from long term steroid use
- **Evaluating for Cushing syndrome:**
 - A 24 hour urine is collected to test for increase cortisol levels
 - Results greater than 80-120 mcg/24 hour indicates Cushing's disease
 - Education:
 - Collect urine in a dark jug
 - Discard first urine
 - Collect all urine for 24 hours
 - Keep in refrigerator or ice chest with secure lid
 - Exactly 24 hours after the start time, empty bladder once more
- **Treatment:**
 - Remove the tumor
 - Decrease steroid use
- S/S: mnemonic ("**A BIG FIB**")
 - **A**ppetite is increase (weight gain)
 - **B**lood pressure is increased
 - **I**nsulin resistance
 - **G**lucose (increase in blood sugar)
 - **F**ibroblasts decreased (poor wound healing), Striae/stretch marks
 - **I**mmune response decreased(risk for infection)
 - **B**one density decreased (osteoporosis)
 - Other s/s:
 - Moon face
 - Muscle wasting
 - Central obesity
 - Buffalo hump
 - Supra clavicle are pads
- Education:
 - Nutrition
 - Calcium and vitamin D supplements
 - Blood pressure medications
 - Avoid crowds, sick people
 - Ways on how to decrease risk for infection

Addison's disease:

- Cause:
 - Adrenocortical insufficiency, low release of glucocorticoids
- The adrenal glands are knock out:
 - Have no salt
 - Have no water
 - Potassium increased
 - Worried about VFIB
 - No sugar (cortisol)
 - ACTH is increased
 - No sex hormones, no sex drive
 - S/S:
 - Hyperpigmentation/ bronze skin
 - N/V
 - Decrease libido
 - Decreased weight
 - Decreased BP, orthostatic Hypotension
 - Low energy
 - Low body hair
 - Salt cravings
 - Hyponatremia
 - Hyperkalemia
 - Depression, irritability
 - Treatment:
 - Administer steroids- want to replace what you don't have
 - Fluids
 - Education:
 - Do not stop steroids, it can lead to an Addison crisis!!
 - Notify HCP of s/s of infection
 - Monitor blood glucose closely
 - Avoid stressful situations
 - If increased in stress you want to increase steroid intake
 - Calcium and vit D supplements

Hypothyroidism:

- Remember: “**SLOW, FAT, COLD**”
- S/S:
 - Depression
 - Lower temperature
 - Fatigue
 - Weight gain
 - Cold intolerance
 - Puffy face

- Heavy menstrual periods
- Muscle aches
- Decreased HR
- Constipation
- LABS:
 - Increased TSH
 - Decreased T3 and T4
- Treatment:
 - Administer Levothyroxine
 - Is a lifelong medication
 - Take on empty stomach, in the morning with water
 - Report any s/s of hyperthyroidism
 -

Hyperthyroidism:

- Remember “**FAST, SKINNY, HOT**”
- **S/S:**
 - Insomnia, fatigue, muscle weakness
 - Irregular heartbeat, increased heart rate
 - Weight loss
 - Heat intolerance
 - Anxiety, mood swings
 - Diarrhea
 - Exophthalmos
 - Protruding eyes
 - Lubricate the eyes, tape shut
 - Goiter
- Labs:
 - Decreased TSH
 - Increased T3 & T4
- **TREATMENT:**
 - Administer propylthiouracil
 - Can be given in first trimester
 - Therapeutic response: 2 weeks
 - Administer Methimazole:
 - Safe in second and third trimester
 - **Radioactive iodine uptake (RAIU)**
 - Treatment for Graves’ disease
 - Helps to determine how active the thyroid is
 - They scan at 2 hrs, 6 hrs, and 24 hours
 - Pre-procedure
 - Allergy to contrast
 - Contraindicated in pregnancy
 - Do a pregnancy test

- Ask if there pregnant
- Hold the thyroid medications if they are taking any
 - 5 to 7 days prior to test
- NPO
 - 2 to 4 hours prior
- Remove any dentures or jewelry
- Post-procedure
 - Drink fluids
 - Want to flush the iodine out
- **High dose radioactive iodine**
 - This destroys the thyroid
 - Education:
 - They are radioactive
 - Stay away from pregnant women
 - FLush the toilet 2-3x
 - Avoid children or close contact with others
 - Use disposable utensils
 - If not, make sure to wash them separately
 - Also wash linens/clothes separately
- If none of the above treatment options work perform a thyroidectomy!!

Thyroidectomy:

- FOA: Airway & Hemorrhage
- Assessment: (watch for complications)
 - Stridor
 - Fever
 - Increased BP
 - Increased HR
 - Swelling around the neck
 - Drooling
- Post-Op complication
 - Hemorrhage
 - Frequent swallowing(can indicate hemorrhage)
 - Hypocalcemia
 - If they take out the parathyroid hormone
- POST-OP
 - MAke sure to keep HOB elevated
 - Monitor for laryngeal stridor
 - Give calcium if due to tetany
 - Support neck and avoid flexion
 - Monitor VS and for hypocalcemia
- If the actually take the parathyroid hormone (they try to avoid doing this)
 - It can cause Hypocalcemia
 - S/S:
 - Arrhythmias

- Trousseau sign
- Chvostek sign

Thyroid storm:

- Excessive release of thyroid into the system
- Cause:
 - Precipitating illness/stress
 - Thyroidectomy
- S/S:
 - High fever
 - HTN
 - Increased HR
 - Seizures
 - Respiratory arrest
- Treatment:
 - 1. Beta Blockers (decreases BP and HR)
 - 2. Methimazole (Antithyroid) & Iodine

DIABETES:

Diabetes Mellitus

- Individuals can't metabolize glucose.
- Causes:
 - Can be due to lack of insulin
 - Cells are resistant
- S/S: **The 3 P's**
 - Polydipsia
 - Polyuria
 - Polyphagia
 - Other S/S:
 - Low specific gravity
 - High serum osmolality
- Two types:
 - **Type I:**
 - Insulin dependent
 - Ketosis prone
 - **Treatment: Mnemonic: "DIE"**
 - **D- Diet**
 - This is the least important
 - Don't want to restrict their diet/carbs
 - **I- Insulin**
 - MOST IMPORTANT
 - **E- Exercise**

- **Type II:**
 - Non insulin dependent
 - Non ketosis prone
 - Typically diagnosed by age 40
- Treatment: **Mnemonic: “DOA”**
 - **D** - Diet
 - MOST IMPORTANT
 - **O** - Oral hypoglycemic
 - **A** - Activity
- DIET:
 - Calorie restriction is most important
 - Educate 6 small feedings each day
- **Diabetes Insipidus:**
 - Have no antidiuretic Hormone (ADH)
 - So you have a lot of diuretic hormone
 - S/S:
 - Polydipsia
 - Polyuria
 - Polyphagia
 - Dehydrated
 - Increased HR
 - Decreased BP
 - Sodium High
 - H&H High
 - Urine osmolality:
 - Low
 - Urine specific gravity:
 - Low
 - Serum osmolality:
 - High
 - **Treatment**
 - Drug:
 - Desmopressin
 - This is like ADH
 - Helps them stop peeing
 - Help them retain fluids
 - Side effect
 - Too much ADH
 - Causing patient to become hyponatremia
 - Watch for s/s:
 - Seizure
 - Altered mental status
 - Water retention

- **SIADH**

- This is opposite of DM(will have oliguria and a normal blood glucose)
- Too much ADH
- Can be a complication of small cell lung cancer
- **S/S:**
 - Decreased urine output
 - Edema
 - Retaining fluid
 - Can cause dilutional hyponatremia
 - Decreased sodium
 - Worried about seizures
 - Give hypertonic saline 3%
 - Have to give slowly
 - Serum osmolality
 - Low
 - Urine Osmolality
 - High
 - Urine specific gravity
 - High
- **Treatment:**
 - Restrict fluids
 - If you give fluids, administer hypertonic fluids
 - 3% sodium chloride
 - Salt tablets
 - Drug:
 - Demeclocycline
 - ADH antagonist

COMPLICATIONS OF DM:

- Acute complications:
 - **Hypoglycemic shock/ hypoglycemia**
 - Low blood sugar in both type 1 and type 2
 - Causes:
 - Not eating enough food
 - Too much medication/insulin
 - Too much exercise
 - S/S: Remember “**Drunk in shock**”
 - Staggering gait
 - Slurred speech
 - Impaired judgment
 - Delayed reaction time
 - Low BP

- Increased HR
- Increased RR
- Cold, pale, clammy

■ **Treatment:**

- Give sugar:
 - Any type of juice
 - Pop
 - Candy
 - Milk
 - Honey
 - Jelly
- Give Ideal combination of foods:
 - 1 Sugar + 1 Starch + 1 Protein
 - Example:
 - Juice and slice of turkey
 - Juice and crackers
 - Skim Milk
- If unresponsive:
 - Glucagon IM
 - Dextrose (D10 or D50) IV
 - The setting will determine which one you give Speaking to someone over phone- Glucagon IM; Hospital- or ER- start IV

• **DKA:**

- High blood glucose seen in Type I DM
- Causes:
 - Eating too much food
 - Not enough meds
 - Not enough exercise
 - **#1 cause is Acute Viral Respiratory Infections in last 2 weeks**
- S/S:
 - D- dehydration:
 - Dry, weak thready pulse
 - Headache
 - Poor elasticity
 - Hot, flushed skin
 - K- Ketones in blood
 - Kussmaul breathing (hyperventilating),
 - K+ (high)
 - A- Acidotic (metabolic)
 - Acetone breath
 - Anorexia due to nausea
- **Treatment:**
 - IV fluids, fast rate

- R insulin
 - Potassium
- **HHNK, HHS, HHNS:**
 - Complication in type II DM
 - This is nothing more than dehydration
 - Intervention:
 - IV fluids
 - GOAL: Is to rehydrate patients

BEST INDICATOR OF LONG TERM GLUCOSE CONTROL:

- **HA1C**
 - Less than 6 = Normal
 - Prediabetic = 7
 - Evaluate/assess more
 - Greater than 8 = Out of control

INSULIN:

- **Lowers Glucose**
- **Regular insulin**
 - Rapid short acting insulin
 - Onset- 1 hour
 - Peak- 2 hours
 - Duration- 4 hours
 - SOLUTION = Clear
 - Can be used IV drip (RUN)
- **NPH: Intermediate acting:**
 - Remember:
 - NOT SO FAST & NOT IN THE BAG
 - Onset- 6 hours
 - Peak- 8-10 hours
 - Duration- 12 hours
 - Solution = Cloudy
 - Given via Suspension - NOT SOLUTIONS- CAN NOT GIVE IV DRIP
- **Fast acting insulin: LISPRO**
 - Onset- 15 mins
 - Peak- 30 mins
 - Duration- 3 hours
 - Give WITH meals
 - NOT BEFORE OR AFTER
- **Long acting insulin: GLARGINE (LANTUS)**
 - No peak
 - Duration 12-24 hours
 - Little to no risk for hypoglycemia
 - Can safely give at bedtime

ALWAYS check expiration dates on insulin bottles:

- Once you open the insulin the expiration date changes, it is **ONLY** good while sealed.
- New expiration date is 30 days from the date it's opened.
- **WRITE OPENED/DATE or EXP/DATE on the bottle.**
- Must teach patients to refrigerate at home
- In hospital setting:
 - keep unopened bottles in the fridge but once opened doesn't have to be refrigerated.
- **Exercise potentiates insulin-**
 - **THINK OF EXERCISE AS ANOTHER SHOT OF INSULIN**
 - If you exercise you need less insulin, but if you have less exercise you need more insulin.

SICK DAYS-

- Glucose increases- so diabetics must:
 - take their insulin even when sick
 - Take sips of water
 - Stay active - helps lower insulin
 - **SICK DIABETICS WILL HAVE HYPERGLYCEMIA & DEHYDRATION (ALWAYS)**

NOTES:

MATERNITY:

NAGELE'S RULE:

- The first date/day of the last menstrual period - 3 months + 7 days + 1 year

FUNDAL HEIGHT:

- Assessment of the fundus as the mom progresses throughout pregnancy is important.
- **Normal fundus levels throughout pregnancy:**
 - 0cm is at the symphysis pubis
 - 20 cm is at the umbilical level
 - At 12 weeks fundus should be just above the symphysis pubis
 - At 16 weeks fundus should be halfway between the symphysis pubis and the umbilicus which is 10 cm
 - After 20 weeks it should correlate with the gestational age, so:
 - At 21 weeks pregnant fundus should be 21 cm above the symphysis pubis

GTPAL:

- G- total pregnancies
- T- Term
 - 37 weeks or greater
- P- Preterm
 - Born between 20-36 weeks
- Abortion
 - Before 20th week
- L- Currently living

PRESUMPTIVE S/S of pregnancy: (What the mom feels/subjective):

- Missed period
- N/V
- Feels contractions
- Breast sensitivity
- Urine frequency
- Fatigue
- Fetal movement (sometimes)

Probable signs of pregnancy: (Examined by the doctor-objective):

- Braxton hicks contractions
- Uterine/cervical changes
- Fetal outline palpation
- Pregnancy test

POSITIVE signs of pregnancy: (Diagnostics):

- Positive pregnancy test
- Fetal heartbeat 8-12 weeks by the Doppler
- 18-20 weeks heartbeat by stethoscope

IUFD: (Intrauterine Fetal Demise)

- Interventions need to be psychosocial:
 - Hold the infant
 - Obtain foot/hand prints
 - Ask if they want to help bathe the baby
 - Ask if they want to name the baby
- Patients at risk for:
 - DIC
 - Thromboplastin from the fetus activates a clotting cascade
 - Worried about internal/external bleeding, so watch for:
 - Ecchymosis
 - Petechiae
 - Lab tests
 - H&H
 - NSAIDS
 - Anticoagulants

GBS:

- Group B streptococcus:
 - Can be present as part of the normal vagina flora
 - Usually has no harm
 - But can be transmitted to newborn, if transmitted your worried about:
 - Pneumonia
 - Sepsis
 - Woman are tested for this at 35-37 weeks of pregnancy:
 - If positive just treat them with antibiotics

NON STRESS TEST:

- An ultrasound on the mom's belly
 - Trying to listen and hear fetal movement
 - Is performed at 28 weeks
- A reactive stress test is good
 - So this means that mom has 2 or more accelerations more than 15 seconds and then returns to baseline.
- A non reactive is not good
 - Baby is not moving around

CONTRACTION STRESS TEST:

- This is done to the mom to figure out how the fetus is going to respond to labor
- Typically done when mom is 34 or more weeks pregnant
- This is done by:
 - Administering oxytocin
 - Or Nipple stimulation
- A positive stress test is bad
 - Baby has a late deceleration during contraction
- A negative stress test is good
 - Baby does not have any late decelerations when mom is stimulated

- TORCH:

- Is infections that the mom can transmit to the fetus
- T= Toxoplasmosis
 - Undercooked meat and cat litter
- O= Other
 - Syphilis
 - Varicella
 - GBS
 - Hep A & B
- R= Rubella
 - Can transmit from mom to fetus
 - Vaccine is not given to mom during pregnancy
- C= Cytomegalovirus
 - Body fluids transmit this
- H= Herpes
 - If mom has an active herpes lesion she has to have a c-section
 - Infant would get herpes if she delivered vaginally

- STAGES OF LABOR:

- **Stage 1:** beginning to complete cervical dilation
 - Three stages:
 - Latent:
 - 0-3 cm dilated
 - 10-30 seconds long contractions
 - 5 to 30 mins apart
 - Active:
 - 4-7 cm dilated
 - 40-60 seconds long
 - 3 to 5 minutes apart
 - Transition:
 - 8-10 cm dilated
 - 45-90 seconds long
 - 1-2 mins apart
- **Stage 2:** Complete cervical dilation to birth of baby

- **Stage 3:** Placenta delivery
- **Stage 4:** 4 hours after the delivery of the placenta
 - Mom most likely to hemorrhage in this stage

FETAL HEART RATE STRIPS: “ VEAL CHOP”

- V- Variable decelerations
- E- Early decelerations
- A - Accelerations
- L- Late decelerations
- C- Cord compression
 - Change moms position to knees up
- H- Head compression
- O- OKAY!!
- P- Placental insufficiency
 - Baby is not getting what they need to survive
 - Not enough blood to placenta, baby is getting decreased oxygen and blood
 - This is very concerning!!!

FETAL STRIPS:

- Top part is the fetus
- Bottom part is the mom
- Each rectangle is 1 minute
- Each strip that you get will be a total of 10 minutes
- Normal FHR= 110-160
- We need to watch for decelerations
 - When fetal heart rate drops
 - Need to figure out what's going on and how to treat it
- **THREE TYPE OF DECELERATIONS:**
 - Early: These are before the contraction
 - Is just head compression, not a huge deal. Don't freak out
 - Late: After the contraction
 - This is placental insufficiency
 - This is bad, baby is compromised
 - Variable:
 - Cord compression/prolapse
 - Baby is a compromise!
- **WHAT DO WE DO WITH LATE DECELERATIONS: ???**
 - 1. Stop the pitocin
 - 2. Left lateral decubitus position

- 3. IV fluids
- 4. Oxygen
- 5. If nothing solves problem, C-section
- **WHAT DO WE DO FOR VARIABLE DECELERATIONS???**
 - 1. Stop pitocin
 - 2. Put mom in knee to chest position
 - 3. Terbutaline
 - 4. No waiting here- go directly to c-section

******* IF YOU SEE MORE THAN 5 CONTRACTIONS THEN DECREASE THE OXYTOCIN*******
THIS IS KNOWN AS UTERINE TACHYSYSTOLE

***** DO NOT WANT FREQUENCY OF CONTRACTION TO BE LESS THAN 2 MINS APART AND GREATER THAN 90 SECONDS LONG*****

FETAL HEART RATE AND OXYTOCIN:

- **NORMAL FHR= GOOD, don't do anything**
- **Fetal Heart rate that is less than 15 or greater 15 consider decreasing the oxytocin and maybe expediting the delivery**
- **Late decelerations= Mom and fetus are hypotensive and Bradycardic**
 - **No oxytocin, C-section**

BLEEDING:

- **Before 20 weeks:**
 - **Ectopic pregnancy**
 - **When the fertilized egg implants outside the uterus**
 - **S/s:**
 - **Amenorrhea(missed period)**
 - **Vaginal bleeding**
 - **Unilateral lower quadrant pain**
 - **Right shoulder pain**
 - **Rigid tender abdomen**
 - **Low grade fever**
 - **Hypotension**
 - **WORRIED ABOUT SHOCK!**
 - **THIS IS AN EMERGENCY**
 - **Spontaneous abortion**
 - **Risk factors:**
 - **Maternal age**
 - **Smoking**
 - **Previous miscarriages**
 - **Happens before 20 weeks**
 - **Cause: Unknown**

- Give psychosocial support to the patient
 - Hemorrhage
 - Risk factors:
 - Maternal age
 - Less than 17
 - Greater than 35
 - Smoking
 - Molar pregnancy
 - Tumor and it develops in the uterus
 - The fetus does not live
 - S/s:
 - Severe N/V
 - Abdominal pain
 - Treatment:
 - Uterine evacuation
 - Teaching and education with the mom
- AFTER 20 WEEKS:
 - Placenta previa
 - Painless bright red bleeding
 - Placenta blocks the baby's exit
 - Complication:
 - Hemorrhage
 - Is considered this when:
 - Greater than 500mL of blood with a vaginal
 - Greater than 1000mL with a c-section
 - Make sure there is no vaginal exam
 - Monitor the number of pads
 - 1 an hour is bad
 - Risk factors:
 - Advanced age
 - Multiple gestations
 - Long birth
 - S/s:
 - Soft, non tender abdomen
 - Painless bright red bleeding
 - Placenta abruption:
 - Premature separation of the placenta from the uterine wall
 - Baby is surrounded by the placenta
 - S/s:
 - Lots of pain
 - Dark red bleeding
 - Complications:
 - Preeclampsia
 - DIC

- Maternal shock:
 - C-section right away
- Risk factors:
 - HTN
- S/S:
 - Rigid, distended hard abdomen

UTERINE ATONY: prolonged or rapid labor

- S/S:
 - Uterus becomes boggy
 - Fundus/stomach boggy, overdistended
 - Uterine muscle won't contract
 - Problem is the patient can't pee
- Complication:
 - Postpartum hemorrhage
- Treatment:
 - Try to get patient to pee
 - Least invasive
 - Turn on water
 - Make them dance.. ect..
 - Second step:
 - Massage fundus
 - Risk factors:
 - Long birth
 - Maternal age
 - Retained placenta

UTERINE INVERSION:

- Occurs after birth
- When the uterine/fundus collapses
- This is an emergency situation
 - Worried about:
 - Hemorrhage
 - Hypovolemic shock
- Treatment:
 - Manual replacement
 - Administer terbutaline
 - Helps slow contractions down

UTERINE RUPTURE:

- Rare
- Is the tearing of the uterus that may result in the fetus being expelled into the abdomen
- Typically happens:
 - After a VBAC
- Maternal tachycardia occurs d/t the rupture
- Treatment:
 - Emergency c-section
 - Administer blood, fluids

PRETERM LABOR:

- Happens before 37 weeks
- S/S:
 - Low back aches
 - Contractions
 - Rupture of membranes
 - Pelvic pressure
- Treatment:
 - 1. Administer IM glucocorticoids (betamethasone)
 - Helps stimulate the fetus lungs stimulation
 - 2. Administer antibiotics
 - Help prevents infection in the newborn
 - Group beta strep
 - 3. Administer IV mag
 - Helps and protects the fetus
 - Helps prevent seizures and preeclampsia
 - 4. Administer terbutaline
 - Helps slow the contractions down
- Worried about:
 - Hemorrhage

ABNORMALITIES with pregnancy:

- Chronic Hypertension
 - Had it before conception
 - Greater than 140/90
- Gestational HTN:
 - This is a new onset
 - Happens at 20 weeks
 - Greater than 140/90
- Preeclampsia
 - Disease occurred by HTN and proteinuria
 - S/S:
 - Increased BP

- HA
 - Facial edema
 - Visual changes
 - Think about seizure precautions and environmental stimuli
- Eclampsia
 - This is preeclampsia with seizures
 - Remember magnesium
 - This can turn into HELLP SYNDROME (Hemolysis Elevated Liver enzymes, low platelet count)
 - S/S:
 - N/V
 - RUQ pain
 - Nursing considerations:
 - Monitor their bleeding
 - Greater than 1000 with c-section
 - Greater than 500 with vaginal
 - Monitor platelets
 - Monitor liver enzymes
- POSTPARTUM HEMORRHAGE:
 - Number one cause is uterine atony
 - Stays big, get an infection
 - Treatment:
 - Stop oxytocin
 - Monitor bleeding
- POSTPARTUM INFECTION:
 - Normal to have a temperature after birth
 - Abnormal:
 - Temperature greater than 100.4 with foul smelling lochia
 - Can indicate infection or endometriosis
 - Can lead to sepsis
- These are normal bleeding:
 - Rubria
 - Red
 - 1-3 days after birth
 - Rubra serosa
 - Pink
 - 3-7 days after birth
 - Alba
 - White/yellow
 - 10 days after birth

HYPEREMESIS GRAVIDARUM:

- Mom is super sick, dehydrated
- S/S:
 - N/V
 - Weight loss
 - Increased HR
 - Hypotensive
 - Hypokalemia (alkalotic)
 - Increased urine specific gravity
 - Decreased urine output
 - Serum osmolality will be decreased

Vaccines you can not give during pregnancy:

- MMR
- Varicella
- Nasal spray of the flu

*****Can not breastfeed with HIV but you can with Hep B******

*****Spontaneous rupture of membranes could indicate infection****

MATERNAL HYPOTENSION SYNDROME:

- Just change position of mom if blood pressure drops

TESTS:

INDIRECT COOMBS TEST:

- Checks for the RH antigen

SERUM ALPHA FETOPROTEIN TEST:

- Checks for neural tube defects

GROUP B STREP:

- Tested at 35-37 weeks

RUBELLA IMMUNITY:

- This is a titer test that is given during first trimester

Epidural can cause vasodilation and is contraindicated in patients who are hypotensive and have abnormal coagulation tests (like if platelets are low)

MEDICATIONS:

- **OXYTOCIN:**

- Helps progress labor
- Side effects:
 - Can cause uterine tachysystole
 - Greater than 5 contractions in a 10 minute period
 - Late decelerations
 - Bradycardia in mom
 - Tachycardia in fetus
 - Hemorrhage
 - Want to massage fundus
 - HAVe them void
 - Water intoxication
 - Emergency c-section
 - D/t a persistent abnormal FHR

- **MISOPROSTOL:**

- Used for ulcers for GI as well
- Can be used close to when the fetus is delivered because it is a category X drug
- This drug is a:
 - Labor induction
 - Cervical ripening agent
 - Category X drug
- Want to contact the HCP if they are on it before we are ready to deliver baby
 - Example:
 - If on it for GI ulcers before they get pregnant they will have to do something else cause you can't be on this drug while pregnant

- **METHERGINE:**

- Used for spontaneous abortion
- Helps control postpartum hemorrhage
- Contraindicated:
 - Mom has hypertension
 - Example mom cant have this drug if she has preeclampsia
 - If patient is at risk for stroke or seizure
 - So cant use if patient has eclampsia

MAGNESIUM:

- Used in preeclampsia and eclampsia

- Hypomagnesemia
 - Patient will feel:
 - Tremors
 - Tetany
 - Seizures
- Hypermagnesemia:
 - Patient will feel:
 - Depressed CNS
 - Drowsy
 - Muscle weakness
 - Decreased DTR
- Want to make sure and check their DTRs before administration of Mag and every hour afterwards
- Antidote:
 - Calcium gluconate for hypermagnesemia
- Implementation of seizure precautions

TERBUTALINE:

- This suppresses contractions used in preterm labor
- If contractions are happening too fast and decelerations are happening then we give this medication
- Wanna give this drug when we want to slow the contractions down

MEDICATIONS THAT YOU DON'T WANT TO TAKE DURING PREGNANCY:

- ACE inhibitors
- ARBS (sartans)
- NSAIDS

POSITIONS:

- McRoberts position:
 - When baby is shoulder dystocia
- Leopoldo maneuvers
 - To get the fetus to present in a lie presentation
- Knee to chest position
 - When there is a prolapsed cord
- Suprapubic pressure
 - When uterine atony is occurring

EARLY DETECTION OF BREAST CANCER/TESTICULAR CANCER:

- Should do a breast self exam once you turn 18-20 years old
 - Do weekly
- Pap smear:

- Begin at 21-29 years old
- Repeat every 3 years
- 30-65 every 5 years
- 65 and older don't need one
- Testicular self exam
 - Need monthly once hit puberty

NEWBORN VITALS:

- HR: 100-160
- Respirations: 30-60
- **APGAR SCORE:**
 - Happens right after baby is born
 - Checks for:
 - Appearance
 - Pulse
 - Grimace/reaction
 - Activity/muscle tone
 - Respiratory effort
 - Check at 1 min and then again at 5 mins
 - Perfect score = 10
- **BISHOP SCORE:**
 - Assessment for cervical favorability and readiness for labor
 - A low score= reflects a low successful labor induction
 - Score is 0-10
 - Greater than 6-8 is good labor

ANTERIOR FONTANELLE:

- Closes by 18 months
- Is diamond shaped

POSTERIOR FONTANELLE

- Closes at 8 to 12 weeks
- Triangle shaped

RHESUS ANTIGEN

- Important to determine who has it during child birth (either mom or dad) d/t it has a life threatening combination for one of the fetuses.
- Combination that's dangerous:
 - Mother who is Rh negative that is having a child with a father who is Rh positive.
 - Two outcomes can happen:
 - Baby: Rh negative

- Baby: Rh positive
 - Worried about this one
- If baby is Rh positive
 - Mom and baby's blood will mix, causing the mom to be introduced to Rh positive blood for first time, causing mom to develop antibodies against Rh positive
 - So next time mom has a baby that is Rh positive, the antibodies she developed during her first pregnancy will cause her to kill(miscarry) any of her future children that have Rh positive blood.
 - First one that is positive is the one you're worried about because now mom will develop antibodies. So then it would cause the NEXT POSITIVE child is at risk not a NEGATIVE child.
 - You give the mom Rhogam at 28 weeks within 72 hour of delivery when she is pregnant with the FIRST Rh POSITIVE baby.
- If mom and dad are Rh negative this is okay
- If mom is Rh positive it doesn't matter what dad is, babies are safe she already has the antigen so she won't develop antibodies.

NOTES: INFECTIOUS DISEASES

ANTIBIOTICS:

- Can be metabolized by the liver or by the kidney
 - How to determine if a patient is developing toxicity?
 - In the liver
 - Check ALT/AST
 - Watch S/S:
 - Jaundice
 - Hepatomegaly
 - Scleral icterus
 - Example:
 - Methotrexate
 - Metabolized by the liver
 - Check ALT/AST
 - Kidney
 - Watch for polyuria
 - Check BUN/Creatinine
 - Example:
 - Vancomycin
 - Is metabolized by the kidneys
 - You will check their Bun/Creatinine levels
- **PENICILLIN:**
 - This is the go to for children
 - Amoxicillin
 - It is a broad spectrum antibiotic
 - Covers gram + and gram -
 - Make sure you using a proper measuring device
 - Don't use a shot glass, teaspoon or tablespoon in drawer
 - Use a syringe or a dropper
 - We are worried about:
 - Anaphylaxis
 - If someone presents with allergies
 - Make sure to ask what the reaction was
 - S/S worried about:
 - Throat tightness
 - Hives
 - Swelling
 - They have a cross reaction to cephalosporins
 - Start with either a:
 - Cef
 - Ceph

- If someone is allergic to penicillins DO NOT give cephalosporins

- **AMINOGLYCOSIDES:**

- This are used for gram negative rods
 - Most common:
 - E. Coli
 - End in -mycin
 - But if it has the word “thro” in it, thro it out
 - Example:
 - Azith**ro**mycin
- Side effects:
 - Nephrotoxic
 - Ototoxic
 - Teratogen

- **MACROLIDES:**

- DRUGS:
 - AZITHROMYCIN
 - ERYTHROMYCIN
 - CLARITHROMYCIN
- Uses:
 - Pneumonia
 - STIs
 - Strep throat
 - Great Alternative for someone who is allergic to penicillin
- Side effect: mnemonic “MACRO”
 - M= Motility issues
 - Diarrhea
 - Upset stomach
 - A= Arrhythmias
 - Prolonged QT interval
 - Can put patient into TORSADES de pointe
 - Watch for M’s and W’s
 - C= Cholestatic Hepatitis
 - R= Rash
 - O= Eosinophilia

- **TRIMETHOPRIM-SULFAMETHOXAZOLE**

- This is a sulfa drug
- Used for gram +/-
 - Often used for UTIs
- Worried about:

- Contraindicated in pregnancy and breastfeeding
 - Photosensitive
- Side effect:
 - Nephrotoxicity
 - Steven Johnson syndrome
 - Is like a third degree burn
 - Might see it described as
 - “Skin is sloughing off”
 - “Desquamation of the skin”

SEPSIS:

- Is a FOA
- Watch for Triad symptoms
 - Temperature
 - >100.4
 - < 96.8
 - Increased HR
 - Decrease BP
 - Systolic will drop below 90
 - MAP will drop below 65
 - Calculate:
 - $SBP + 2(DBP) / 3$
- Will have an increase in WBC
 - >12,000
- Treatment:
 - Fluids

INFECTIVE ENDOCARDITIS:

- Infection in the heart
- Caused:
 - IV drug user
 - Staph epidermidis
- S/S:
 - Fever
 - Chest pain
 - Chills
 - Murmur
- Treatment:
 - Vancomycin
 - IV for 4-6 weeks
 - Prophylactic antibiotics for dental procedures
 - Monitor temperature regularly