Mark Klimek notes

How to guess

1. Use knowledge
2. Common sense
3. Guessing strategy

Psych

- Nurse will examine own feeling about something-so do not counter transfer
- Establish trust relationship

Nutrition

- Pick chicken not fried chicken
- Fish but not shellfish
- Never pick casseroles for kids
- Never mix meds in food
- Toddlers-finger foods
- Preschool-one meal a day is OK. Leave them alone

3 expectations to have

- Do not expect 75 questions-think 265
- Do not expect to know everything
- Do not expect everything will go right

Pharm

- Most tested area is side effects
- Do not worry about route or dose
- If know what drug does but do not know side effect-pick a side effect in same body system the drug is working
- No idea what the drug is-look to see if it is PO-pick GI side effect
- Never tell kids that med is candy

OB-check fetal HR

Med Surg

- 1st thing assess-LOC
- 1st thing do-establish airway

Peds

- All based on principle-give child more time to grow and develop
- When in doubt-call it normal
- When in doubt-pick the older age
- When in doubt-pick the easier task-more time to do the harder one

General

- Rule out absolutes
- If 2 answers say same thing-neither is correct
- If 2 answers are opposite-one is probably right
- Umbrella strategy
- If questions has 4 right answers and ask for priority of needs of a patient-worse consequences game-worst outcome
- When stuck between two answers-read the question

Sesame street rule-use only as last option

- Right answer tends to be different than the rest
- Wrong answers are usually all similar
- Right answer is most unique or different

Answer based on what you know, not what you don't know

- If you dont know something in a question-pull it out of the equation-use common sense
- Nclex also testing on common sense-do not overanalyze-do not think like a nurse
- Go with gut answer-only if other answer is superior

Prioritization

- Decide who is sickest or healthiest--->based on question
- ABC does no work with prioritization questions

- **Answers will have 4 parts**
  - Age
  - Gender
  - Diagnosis
  - Modifying phrase

  - 2 are irrelevant ---->age and gender
  - In Peds pay attention to age but in prioritization age is not important
  - Modifying phrase most important
  - Ex: pt has angina pectoris vs MI ----> MI is high priority
  - Pt has angina pectoris and unstable BP vs MI with stable VS ---->angina with unstable BP is now the priority

4 rules to prioritization

1. Acute beats (higher priority than) chronic

Example: COPD versus appendicitis--->appendicitis is the priority

2. Fresh postop (<12 hrs) beats medical or other surgical

Example: 2 hr post op versus appendicitis--->2 hr post op is the priority

3. Unstable beats stable

Stable words	Unstable words
● Stable ● Chronic illness ● Post op >12 hrs ● Local or regional anesthesia ● Lab abnormalities A or B level ● Unchanged assessments ● To be discharged ● Ready for discharge ● Admitted longer than 24 hrs ago ● Experiencing the typical expected S/S of disease with which they were diagnoses	● Unstable ● Acute illness ● Post op <12 hrs ● General anesthesia (1st 12 hrs) ● Lab abnormalities C or C level ● Changed/changing assessment ● Not ready for discharge ● Newly diagnosed ● Newly admitted ● Experiencing unexpected S/S

Example:

- 16 yo w/ meningococcal meningitis who has had temp of 103.8 F since admission 3 days ago.
- 61 yo male w/IBS who spiked temp of 103 F this afternoon.
- Who is higher priority and why?--->2 nd option is priority-->have more high priorities than 1st

<u>Always unstable no matter what-even if expected</u>

- Hemorrhaging (not bleeding)
- High fever over 105 F--->patient can have seizure
- Hypoglycemia
- Pulselessness (vfib or asystole) or breathlessness

Note: at scene of accident (unwitnessed)- they are death-low priority

<u>3 things that causes blacktag</u>

@ scene of accident

- Pulselessness
- Breathlessness
- Fixed and dilated pupils (even if still breathing)

4. Tiebreaker---> the more vital the organ, the higher the priority.

- Organ in which the modifying phrase is referring to
- Most vital organs
    1. Brain
    2. Lungs
    3. Heart
    4. Liver
    5. Kidneys
    6. Pancreas

Psychotropic drugs

All have decrease BP and change in weight (mostly weight gain)

Phenothiazines-all end in **zine**

- Old class of drugs-1st gen antipsych
- Does not cure psych diseases-decrease symptoms
- Large doses-antipsychotics
- Small doses-antiemetics
- Considered major tranquilizers

Side effects of tranquilizers

- **A**nticholinergic effects-Dry mouth
  - **B**lurred vision
  - **C**onstipation
  - **D**rowsiness
- **E**ps (extraparametal syndrome-like Parkinsons
- **F** I cheated-photosensitivity
- A**G**ranulocytosis-low WBC

ABCDEFG

- Nursing actions when pt has S/E-teach pt to inform doc and keep taking pill
- Adverse effects/toxic effects-hold drug and call doc
- #1 dx for tranquilizer pts-risk for injury/safety issues
- Know decanoate (added at end of drug names)-long acting IM form given to noncompliance clients. May be court order

Benzodiazepines-always have **zep** in the name

- Antianxiety meds
- Minor tranquilizers

Prototypes-diazepam, lorazepam, fluorezepam, clorazepam

More than minor tranquilizers

- Preop induce anethesia
- Alcohol withdrawal
- Seizures
- Help relax and calm down when on ventilator
- Work quickly
- Do not take for more than 2-4 weeks
- S/E-same as psychotropic but on ABCD (anticholinergic effects)
- #1 dx-safety/injury

Clozapine (clozaril)-majority ending in **zapine**

- Prototype(original)-2nd gen atypical antipsychotics
- Treat schizophrenia
- Does not have S/E **A-F**
- Have S/E agranulocyte-low WBC-Bad
- Monitor low WBC

Tricyclic antidepressants (il)

- Old class of antidepressant
- Now into new NSSRI
- Mood elevator to treat depression
- Elavil (amitriptyline)
- Tofranil (imipramine)
- Anafranil (clomipranine)
- Desyrel (trazodone HCL)

Elavil S/E

- **A-D**
- Euphoria-upper
- Must take 2-4 weeks for full effect-teach pt it will take a while
- Can be on it for life

Prozac (fluoxetine)-SSRI

- Depression, OCD, panic disorder
- Similar to Elavil-same S/E
  - **A-D** and euphoria
- Causes insomnia-give before 12pm NOT at bedtime
- When changing dose for adolescent or young adult-watch for suicide risk
- Suicidal risk
  - Prozac not risk alone
  - Recently changed dose & adolescent/young adult

Zoloft (Sertraline)-SSRI

- Antidepressant
- Causes insomnia but can give at bedtime
- When taking-have to lower dose of other meds-high levels-does not metabolize
- St Johns Wart cannot be taken-will cause serotonin syndrome (sweating, apprehension, dizzy, headache)
- Coumadin/warfarin-will bleed-need to reduce coumadin

Haldol (haloperidol)

- Long acting IM-decanoate form
- S/E same as phenothiazine **(A-G)**
- Old antipsychotics
- NMS-neuroleptic malignant syndrome-elderly pts and young white schizophrenic due to overdose

NMS-neuroleptic malignant syndrome

- fatal hyperpyrexia-fever
- Anxiety and tremor
- 105-108 temperature-medical emergency-even 102 F call for help
- Dose for elderly- 1/2 adult dose

MAO Inhibitors

- 1st class antidepressants
- Beginning of names (Mar), (Nar), (Par)-trade name not generic
  - Marplan (Isocarboxazid)
  - Nardil (Phenelzine)
  - Parnate (Tranylcypromine)

Side effects

- Dry mouth
- Nausea
- Diarrhea or constipation
- Drowsiness
- Dizziness
- Headache

Foods

- Fruit/veggie-do not have thiamine so can have

Except: banana, avocado, raisin (any dry fruit) - BAR

- Breads, cookies, pie-OK
- No organ meat
- No preserved meats
- No dairy (cottage and mozzarella cheese OK)
- No yogurt
- No alcohol or chocolate

- Teach patient not to take OTC when on MAOI

Lithium

- Treat bipolar-decreases the mania
- Stabilizes nerve cell membrane
- Most unique-side effects different
- S/E-act like electrolytes
  - Peeing
  - Pooping
  - Paresthesia (numbness & tingling)
- If give large dose lithium-paresthesia first sign
- If S/E (normal occurence to med)-give med and do not need to call doc
- Toxic effects-overdose-tremors, metallic taste, severe diarrhea
  - Hold and call doc

Interventions on lithium

- Increase fluids-peeing and pooing side effect so reduces risk of dehydration
- Monitor sodium- so reduce risk of dehydration
- Pt sweating and working outdoors-give Gatorade not water-need normal sodium

Lithium linked to sodium

- Monitor sodium
- Decrease sodium-lithium becomes toxic
- Increase sodium-lithium ineffective
- Sodium needs to be normal (competitie binders)

Test knowledge of principles

As the pH goes---->so does my patient

- High pH--->irritability, excitable
- Low pH--->shut down
- Except for potassium
  - High pH--->K low
  - Low pH--->K high

pH and bicarb (HCO3) in same direction--->metabolic

Sign & Symptom of High pH (alkalosis)	**Sign & Symptom of Low pH (acidosis)**
• Irritability • Hyperflexia • Hypoxia • Tachypnea • Borborygmus (increased bowel sounds) • Seizure-suction machine @ bedside	• Hyporeflexia • Bradycardia • Lethargy • Obtunded (one step further than lethargy) • Paralytic ileus • Coma • Respiratory arrest-ambubag @ bedside • Kussmaul's respiration-metabolic acidosis. Deep labored breathing pattern. Form of hyperventilation.
If Lung---->respiratory issue • **If client over ventilating (hyperventilating)---->losing CO2(alkalosis)** • **If client is under ventilating (hypoventilating)---->retaining CO2(acidosis)** • **Near drowning is hypovent---->resp acidosis** • **Emphysema is also hypovent--->resp acidosis** • **RR different than ventilation--->pay attention to SaO2** • **Pt with PCA pump has depressed respiration and so ventilation going down--->resp acidosis**	**If not Lung--->metabolic issue** • Pt has prolonged gastric vomiting OR suctioning--->**pick metabolic alkalosis**--->losing acid and become basic • If not lung, vomiting, or suctioning--->**metabolic acidosis** **Examples:** • GI surgeryand NG tube low and suctionging 3 days--->metabolic alkalosis • Hyperemesis gravida--->metabolic acidosis • Dehydration, acute renal failure, 3rd degree burn 60%, idopathic bolus xxx ---->metabolic acidosis • Pay more attention to the modifying phrase over the original noun--->pt with vomiting, **who is not dehydrated**

Electrolytes

Potassium	Calcium	Magnesium	Sodium
Kalemias-do the same as the prefix except: HR & UO	**Calcemias do the opposite of the prefix**	**Magnesemias do the opposite of the prefix**	**Natremia think neuro changes**
Hyperkalemia ● **Everything high** ● **HR & UO low**	**Hypercalcemia** ● **Everything low** ● "too much sedative"	**Hypermagnesemia** ● **Everything low** ● "too much sedative"	**Hypernatremia** ● **Dehydration** ● **Hypokalemia** ● **DKA-b/c of dehydration**
Hypokalemia ● **Everything low** ● **HR & UO high**	**Hypocalcemia** ● **Everything high** ● "not enough sedative" ● Choveseck sign and Trousseau sign -->neuromuscular irritation-->seizure	**Hypomagnesemia** ● **Everything high** ● "not enough sedative"	**Hyponatremia** ● **Fluid overload** ● **hyperkalemia**
Only potassium treatment on NCLEX ● Never push potassium IV ● Not more than 40 mEq--->question and clarify ● Fastest way to lower potassium--> D5W w/Regular insulin ● Drive potassium into cells out of blood (preven from killing) ● Does not rid of K but put in cell to save life ● Over next 8 hrs will leak back into blood ● Only temporary ● Kayexalate ● Goes into gut ● Full of sodium ● Trades Na for K ● Excrete kayexalate with K ● Blood ends up high in sodium--->hypernatremia--->dehydration results ● Give IV fluids ● Takes hours but permanent solution to lower K ● Remember---> K exits late (kayexalate		**Miscellaneous** ● Earliest sign of electrolyte imbalance--->numbness and tingling(paresthesis) ● Circumoralparesthesis--->numbness and tingling lips ● Universal sign of electrolyte imbalance--->muscle weakness (paresis) **Mg 1.2-2.1** **Calcium 9-10.5** **Potassium 3.5-5.3** **Na 135-145**	

Thyroid and Adrenal

Hypothyroidism

- Hypometabolism
  - Obese
  - Boring, dull
  - Cold intolerance-give blanket
  - Heat tolerance
  - Low BP
  - Low HR
  - Slow test takers

- Myxedema
- Not enough hormones

Treatment
- Thyroid hormones--->synthroid/levothyroxine

- Do not sedate them--already slow
- So question preop order of ambien (sleeping pill)
- Never hold thyroid pills without doctor confirming

Hyperthyroidism

- Hypermetabolism
  - Weight loss
  - Irritability
  - Heat intolerance
  - Cold tolerance
  - Exopthalmus
  - Sweating/diaphoresis

- Graves disease

3 ways to treat

1. Radioactive iodine
- Put in room alone for 24 hours
- Flush urine 3x-no spill on floor--->hazmat team to clean

2. PTU-puts thyroid under
- Cancer drug but helps to lower thyroid
- Immunosuppression-monitor WBC

3. Surgical removal-Thyroidectomy
- **Total thyroidectomy**
  - Lifelong hormone replacement.
  - At risk for hypoparathyroidism (low calcium)

- **Partial (subtotal) thyroidectomy**
  - Do not need lifelong replacement.
  - Risk for thyroid storm/toxicosis

Thyroid storm S/S
- High temp (105 F)
- High BP--->like stroke
- Severe tachycardia
- Psychotic delirium
- Medical emergency and can cause brain damage

Thyroid Storm treatment
- First--->ice pack
- Best---->cooling blanket
- Decrease temp
- Increase O2-oxygen mask 10L
- Either come out alive or die. Self limiting condition
- 2 staff for one patient

Post op

Priority 1st 12 hours
1. Airway
2. Hemorrhage

12-48 hour window
- Total thyroidectomy-tetany due to low calcium
- Partial thyroidectomy-thyroid storm

After 48 hours
- Risk for infection

Addison's Disease	Cushing's Syndrome
● Undersecretion of adrenal cortex **S/S** ● Hyperpigmented (very tan) ● Do not adapt to stress-->any stress--->low glucose and low BP--->go into shock Purpose of stress response is to raise glucose and BP ● Stress is bad **Treatment** ● Give steroids(ending in asone)--->glucocorticoids In addisons--->add asone Extra: need to increase sodium in diet Addisonian crisis-due to decrease BP	● Oversecretion of adrenal cortex **S/S** ● Puffy moon face ● Hursuitism-lots of hair ● Trunkal/central obesity ● Buffalo hump ● Gynecomastia (man boobs) ● Atrophy of the extremities (muscle wasting) ● Retain sodium and water ● Loosing potassium-fecal ● Striae on abdomen (stretch marks) ● High glucose (look like diabetes) ● Bruising ● Infection (immunosuppressed) ● Grouchy **Treatment** ● Adrenalectomy-if done bilaterally-->get Addison's disease--->(asone) steroids

Laminectomy

- Removal of vertebral spinous processes--->wings of the vertebral bones
- To relieve nerve root compression
- S/S of nerve root compression---> 3Ps---->pain paresthesia (numbness/tingling), paresis (muscle weakness)
- Location of problem is most important
- 3 locations--->cervical, thoracic, lumbar

Can apply to all spine issues b/c it is based on location

Preop

Cervical
- Innervate diaphragm and arms
- Assess breathing and function of arms/hands

Thoracic
- Innervate abdominal and ab muscles
- Assess cough mechanism and bowel sounds

Lumbar
- Innervate bladder and legs
- Assess bladder (last void) and function of legs

Postop complications
- Cervical--->trouble breathing, pneumonia
- Thoracic--->pneumonia, paralytic ileus
- Lumbar--->urinary retention, leg problems

Anterior thoracic-will have chest tube from front though chest to spine-->pneumothorax
Laminectomy with fusion-bone graft from iliac crest (hip). 2 incision-hip and spine-hip most pain and bleeding-->hemovac and drainage.
Can use cadaver bone instead of hip graft

Postop
- Do not dangle at edge of bed-for ortho hypotension it is OK
- Do not sit for longer than 30 min
- May walk, stand, lie down w/o restriction
- Logroll

Discharge teaching
- Do not sit longer than 30 min lasting 6 weeks
- Lie flat and log roll for 6 weeks
- No driving for 6 weeks
- No lifting > 5 lbs for 6 weeks

Permanent restrictions
- Never allowed to lift objects by bending at waist-->use knees
- Cervical laminectomy-no lifting over head-need step stool
- No biking, rollercoaster, horseback riding

Lab values

A-->abnormal but do nothing B-->abnormal need to be concerned but just monitor C-->priority, must do something D-->highest priority ● **Remember the 5 D's** ● **Remember the C's** ● **Know the Neutropenic Precautions**		● Hypoxia pt--->HR high first and then RR goes up ● Hypoxia & dehydration-->causes episodic tachycardia ● Anemia patients have falsely elevated pulse oximetry ● Priority protocol--->hold, assess (focused), prepare..., call physician	
Serum creatinine-kidney function	0.6-1.2	A	
INR-monitor coumadin	2-3		
	>4	C	Prepare Vitamin K
Potassium	3.5-5.3		
	<3.5	C	Prepare potassium
	>5.4-5.9	C	Prepare Kayexalate, D5W R insulin
	>6	D	STAT-prep Kayexalate, D5W R insulin
pH	7.35-7.45		
	6's	D	Assess vitals, nothing to prep, call Doc
BUN-nitro waste in blood	8-25		
	>25	B	Assess for dehydration
Hemoglobin	12-18		
	8-11	B	Assess bleed, malnutrition
	<8	C	Assess bleed, prep to admin blood
Hematocrit (3x Hgb)	36-54		
	>54	B	Assess for dehydration
Bicarb	22-26	A	
CO2	35-45		
	50's	C	Assess respiration, prep...pursed lip breathing, may not need to call Doc
	60's	D	Respiratory failure, stay in room, prep intub/vent, call respiratory and Doc
PO2 **ABG**	78-100		
	Low 70's	C	Assess respiration, prep to give O2, may not need to call Doc
	Low 60's	D	Respiratory failure, intub/vent, put on Oz, call Doc
SaO2	93-100		
	<93	C	Assess then O2
BNP	<100		
	>100	B	Watch for CHF
Sodium (Na)	135-145		
	<135	B	Assess overload. If also decrease LOC then a C
	>145	B	Assess for dehydration. With decrease LOC->C
Total WBC	5000-11000		Immunosuppressed. Assess for infection and place on neutropenia precautions
	<5000	C	
Absolute neutrophil count (ANC)	>500		
	<500	C	
CD4 count	>200		
	<199 AIDS	C	
Platelets	140,000-200,000		
	<90,000	C	Assess for bleeding. Thrombocytopenia
	<40,000	D	Assess for bleeding. Put on bleeding precaution
RBC	4-6 million		
	< or >	B	

Heparin---> PTT
Coumadin---> INR and PT

Drug Toxicity

Lithium	Digitalis (Lanoxin)	Aminophyline	Phenytoin	Bilirubin
Bipolar (mania)	Treat afib and congestive HF Antidote:digibind	Relieves spasms in airway. Muscle spasm relaxer	seizures	Tested in newborns-normally high. Waste product from breakdown of RBC
0.6-1.2 therapeutic level	1-2 therapeutic level	10-20 therapeutic level	10-20 therapeutic level	10-20 elevated level
>2 toxic level	>2 toxic level	>20 toxic level	>20 toxic level	>20 toxic level

- Kernicterus-bilirubin in brain-->cross BBB
  - Bilirubin at level 20-->asepsis (w/o infection), meningitis, and encephalitis-->can die
  - Opisthotonos-position baby assumes when bilirubin in brain. Hyperextend due to irritation w/ meninges and bilirubin. Place child on side when this occurs.
- Jaundice-bilirubin in skin

Calcium channel blockers (CCB)	
Are like calcium for your heart--->calms heart down ● Heart tachycardic-->could use relaxant so give CCB ● Shock--->body slowing down so NO CCB ● Give when heart needs a break/rest ● Are (-) inotroped, dromotropes, chromotropes-->weaken, slow down, and depress heart ● Antihypertensive-relax heart & blood vessels-->BP goes down ● Antiangina drug-relax heart-->uses less O2 so decrease O2 demand ● Antiatrial arrhythmia-treat afib, aflutter, supraventricular tach, and other atrials	**Side Effects** ● Headache--->vasodilation in brain gives migraine ● Hypotension Note: better for asthma patients than beta blockers **Names** ● Ending in (dipine) ● Also cardizem/diltiazem ● Also verapamil **Administration** ● Measure BP prior to admin Hold if systolic BP is <100

Notes on Arrhythmias	
Atrial arrhythmias	ABCD Anticoag, Beta blockers, CCB, digitalis (digoxin/lanoxin)
Vfib	defib
Asystole	CPR Epinephrine Atropine
Vtach PVC	Lidocaine Amniodarone

Review cardiac rhythms

- Know by sight
  - Normal sinus
  - Vfib
  - Vtach
  - Asystole
- Know P wave (atrial), QRS complex (ventricular), sawtooth-atrial flutter

	Signs & Symptoms	**Treatment**
Hiatal Hernias ● Regurgitation of acid into esophagus because the upper stomach hernias upward through the diaphragm. ● When eat, food sits above diaphragm then comes back up ● Gastric contents go wrong way but still empties correct rate ● **A direction issue**	● GERD-heartburn indigestion ● Symptoms depend on position (lying down after eat) ● GERD at random times is not hiatal hernia	● Want stomach to empty faster ● High HOB-gravity empty stomach faster ● High fluid ● High carbs

Dumping Syndrome
● Follows gastric surgery
● Contents dump quickly into duodenum
● Contents move in right direction but at wrong rate
● **A speed issue**
	● Think drunk person
	  ● Staggering gait, slurred speech, labile emotions, delayed reaction, cerebral impairment (decrease flow to brain)
	● Shock- decrease BP, increase HR, pale, cold, clammy
	● DRUNK +SHOCK = hypoglycemia
	● Acute abdominal distress
	  ● Borborygme (diarrhea)
	  ● Crampy
	  ● Guarding
	  ● Distending
	  ● Tenderness
		● Head flat to eat, turned to side
		● Low fluid--->1 hr before and after meal
		● Low carb

Tip: Be aware of “first” versus “best” when choosing answer

Chest tubes-higher risk for infection than thoracentesis

- Purpose is to re-establish (-) pressure in pleural space. The (-) is good because it makes things stick together.
- Pneumothorax (air)-chest tube removes air causing (+) pressure and re-establishes (-) pressure
- Hemothorax (blood)-chest tube remove blood causing (+) pressure and re-establishes (-) pressure
- Pneumohemothorax-air and blood-->apical and basilar tubes
- Disease will tell what to expect
- Post op pneumonectomy (lung removal)-no chest tube

Location of tubes

- **Apical**-up high-->removes air (pneumothorax)-->because air rises

Air should be bubbling

- **Basilar**-bottom-->removes blood (hemothorax)

Blood should have drainage

Troubleshooting

- **If closed drainage is knocked over-**->set back up and have patient take deep breath-->not emergency-do not need to call HCP
- **If water seal breaks**--> (+) pressure can get in the pleural space

FIRST--->clamp it, cut away from broken device, end of cut tube-stick in sterile water, unclamp-re-establish water seal

If asked what is the BEST thing if water seal breaks-->submerge tube under sterile water

- **Chest tube pulled out**--> FIRST thing-->take gloves hand and cover hole
  BEST thing---->vasoline gauze
- **Bubbling**

Water seal has intermittent bubbling--->good-->document

Water seal has continuous bubbling---->bad--->leak-find it and tape it until stops leaking

Suction control chamber has intermittent bubbling--->bad--->suction not high enough-go to water and turn up until bubbling continues

Suction control chamber--->good--->document

<u>Rules for clamping tube</u>

1. Longer than 15 sec clamp tube-->need doctors order-->have sterile water nearby
2. Use 2 rubber tip double clamps

Thoracentesis- in and out to regain (-) pressure in lungs

Crutches
● 2-3 finger width below axilla fold ● Point lateral to and anterior to foot ● Hand grip-elbow flexion 30 degrees ● 2 point - crutch and opposite foot together-mild bilateral weakness ● 3 point - 2 crutches and bad leg together ● 4 point - move a crutch then opposite leg and then the other crutch and opposite leg- severe bilateral weakness ● Swing through - cannot bear weight. Leg does not tough the ground. Can be used for amputee <u>Stairs</u> ● Up with good foot then crutches ● Down with bad foot then crutches
Cane
● Cane on strong side
Walker
● Pick up-->set down--->walk to it ● Belonging to side of walker ● No tennis balls or wheels on water

Diabetes Insipidus	**SIADH**
● Polyuria, polydypsia leading to dehydration due to low ADH ● High urine output ---> low urine specific gravity ● Fluid volume deficit	● Oliguria, not thirsty ● Gain weight ● Retain water ● Decrease urine output --> high urine specific gravity ● Fluid volume excess

Diabetes	**S/S**	**Treatment**

Type I
● Insulin dependent
● Juvenile onset
● Ketosis prone
	● Polyuria (increase urine)
	● Polyphasia (increase swallowing)
	● Polydypsia (increase thirst)
		DIE
		● Diet
		  ● Least important-count carbs/calories
		● **Insulin**
		  ● **Most important-lower blood sugar**
		● Exercise

DM-Type 2 ● Non insulin dependent ● Non ketosis prone ● Adult onset		DOA ● **Diet** ● **Most important-restrict calories and 6 small meals** ● Oral hyperglycemic ● Activity

3 acute Complications of Diabetes		

Hypoglycemia	**Causes**
	● Not enough fluid
	● Too much insulin/meds--->Primary cause
	● Too much exercise
	
	● Danger--->brain damage
	
	S/S
	● DRUNK-labile (all over the place)
	● SHOCK
	  ● Decrease BP
	  ● Tachycardia
	  ● Tachypnea
	  ● Cold and clammy
	  ● Pale
	  ● Patchy
		Treatment
		● Rapid-metabolize carb/sugar
		  ● Juice, hard candy, milk, honey, jam/jelly
		
		● Give combo of food-sugar and protein
		  ● Milk (skim) with cracker OR juice with cracker
		
		● Unconscious---> give glucagon IM or dextrose IV (D10 or D50)

DKA **Only Type 1** **Ketones in blood-confirm DKA** **Ketones in urine-no confirmed DKA**	**Causes** ● #1 cause---> acute viral upper respiratory infection ● After recovery-getting lethargic ● Blood glucose 800 in ER- ask if there was a respiratory infection in last 2 weeks. **S/S** ● Dehydration ● Ketones, Kussmaul, increase K (potassium) ● Acidosis, acetone breath (fruity breath), anorexia (due to nausea-do not want to eat)	**Treatment** ● Priority-acidosis, ketones ● Give insulin ● For dehydration-->IV fluids (Regular insulin fast rate)

HHNC/HHNK
Type 2 DM
	● Same as dehydration
	● Skin same as dehydration--->dry, warm, poor turgor
	● Fluid volume deficit #1 Dx
	
	● Do not burn fat or make ketones
	● More die from this
		Treatment
		#1
		● Give fluids
		
		● Outcome same as rehydration
		  ● Increased output
		  ● Increased BP
		  ● Moist mucous membrane

Long term complications of diabetes	Lab test glucose--->Ha1C monitoring
1. Poor tissue perfusion 2. Peripheral neuropathy Complications are due to type 1 and 2	● Normal -----> 6 and lower ● Out of control ----->8 and up ● Borderline ---> 7 ---> education, workup-may have infection

Insulin ----> lowers blood glucose

Need to know 4

Rapid short acting	Intermediate acting	Fast acting	Long acting
Regular (Humulin R, Novalin R) ● Onset 1 hr ● Peak 2 hr ● Duration 4 hr ● Clear solution ● IV drip insulin R--->rapid run IV	**NPH** ● Onset 6 hrs ● Peak 8-10 hrs ● Duration 12 hrs ● Cloudy ● Suspension (not solution)-particles fall to bottom ● Cannot IV drip N-->not so fast (intermediate) not in the bag (no IV)	**Lispro** ● Onset 15 min ● Peak 30 min ● Duration 3 hrs ● Give as begin to eat (with meal)	**Lantus/Glargine** ● No essential peak-slow ● Low hypoglycemic risk ● Safely given at bedtime regardless of glucose ● Duration 12-2 hrs

- Diabetic is sick--->glucose goes up
- Even if do not eat-->need insulin
- Take sips of water--->avoid dehydration
- Stay as active as possible---->lowers glucose
- Check expiration dates
- Open it-->expiration date no longer valid--->new expiration is 30 days after open. Document on container
- Refrigeration optional in hospital
- Teach to refrigerate at home
- Exercise increases insulin--->think of exercise as insulin
  - When exercise/sports--->need less insulin

- Ac-before meal
- Hs- at bedtime

Medication help and hints

- What is humulin 70/30?
  - Mix of R and N insulin 70% NPH ans 30% Regular

- Can you mix insulin in same syringe--->Regular first then NPH
  N-air in
  R-air in
  R-draw Regular
  N-draw NPH

- What needle to give particular injection
  - IM ---> 21 gauge 1 inch
  - Subcut ---> 25 gauge 5/8 inch

Heparin and Coumadin

- Heparin
  - IV or subcut
  - Works immediately
  - Cannot be given longer than 3 weeks (except Lovenox)-can create antibodies
  - Lab to monitor--> PTT
  - Can be given to pregnant women
  - Antidote-->protamine sulfate

- Coumadin
  - PO
  - Takes few days to a week to work
  - Can take forever
  - Labs to monitor---> PT and INR
  - Cannot be given to pregnant women
  - Antidote--->vitamin K

- Diuretics ending in X, semide, plus diuril ----> wastes K (potassium)

- Muscle relaxants
  - Flexeril
  - Baclofen
  - S/E ---> fatigue, muscle weakness
  - Teach ----> do not drink, do not drive, do not operate machinery

Aminoglycosides-powerful class of antibiotics		
• Think- a mean old mycin • End in mycin • Not aminoglycosides (thro) throw off the list--->ery**thro**mycin, azy**thro**mycin, clari**thro**mycin • Dangerous drugs • Antiibiotics to treat serious, life threatening, gram (-), resistant infection. • Tuberculosis • Septic peritonitis • Fulminating pyelonephritis • Burns >80% of body • Sepsis **mean out infection**	**Toxic effects** • End in mycin-->sound like mice • Mice-->think of ear -->**ototoxic-**monitor hearing, ringing (tinnitis), vertigo/equilibrium, dizziness • Ear shaped like kidney--->second toxic effect---> **nephrotoxicity**--> monitor creatinine-24 hr creatinine clearance • Admin every 8 hours-IM or IV • Do not give PO-not absorbed	• Hepatic enceph/coma-->reduce ammonia--->oral mycin will do that. • Sterilize bowel-->kill ecoli and decrease ammonia • Who can sterilize bowel-->neo can-->neomycin, canomcin--->specific for sterilizing bowel before surgery--taken PO