

# NCLEX-RN NOTES/HELP YOU PASS

## TIPS:

- Deal with patients rather than with machines.
- AVOID: never, always, must, "why?", "I understand".
- If 2 opposites (e.g. hyper-/hypo-), one is correct.
- Do not leave the patient alone.
- Choose physical over psychological. (**Think Maslows**)
- IDK the answer: pick the one with the most information.

ABC (except in emergencies, distress situations & CPR)

Assessment vs. Implementation

Acute vs. Chronic

Stable vs. Unstable

Expected vs. Unexpected

Real vs. Potential

Odd man out

## DO NOT DELEGATE (PACET):

- Planning;
- Assessment (initial);
- Collaboration;
- Evaluation;
- Teaching.

⇒ UAP's cannot be delegated: "EAT", medication & unstable patients.

⇒ LPN's cannot be delegated anything related with blood and are assigned the most stable patients.

1 tsp = 5 ml	1 pint = 2 cups (16 oz)
1 tbsp = 3 tsp (15 ml)	1 quart = 2 pints (32 oz)
1 oz = 30 ml	1 gr (grain) = 60 mg
1 cup = 8 oz	1 kg = 2,2 lbs
1 g = 1 ml (diapers)	$^{\circ}\text{F} = (^{\circ}\text{C} \times 1,8) + 32$
Temperature normal range: $98,6^{\circ}\text{F} \pm 1$ ( $37^{\circ}\text{C} \pm 0,5$ )	
MAP: $(\text{systolic} + 2 \times \text{diastolic}) / 3$ Normal: 70-105 mmHg (>60 mmHg)	
CVP: 2-8 mmHg (↑CVP can indicate right ventricular failure or fluid volume overload)	

## ETHICS & LEGAL ISSUES

- **Veracity** is truth and is an essential component of a therapeutic relationship between a health care provider and his patient.
- **Beneficence** is the duty to do no harm and the duty to do good. There's an obligation in patient care to do no harm and an equal obligation to assist the patient.
- **Nonmaleficence** is the duty to do no harm.
- **Tort**: litigation in which one person asserts that an injury (physical, emotional or financial) occurred as a consequence of another's actions or failure to act.
- **Negligence**: harm that results because a person didn't act reasonably.
- **Malpractice**: professional negligence.

- **Slander**: character attacked and uttered in the presence of others.
- **Assault**: act in which there is a threat or attempt to do bodily harm.
- **Battery**: unauthorized physical contact.

## CULTURAL CONSIDERATIONS

### 1. African Americans

- Higher incidence of high blood pressure and obesity;
- High incidence of lactose intolerance.

### 2. Arab Americans

- May remain silent about STIs, substance abuse, and mental illness;
- After death, the family may want to prepare the body and autopsy is discouraged unless required by law;
- Use same-sex family members as interpreters.

### 3. Asian Americans

- Believe in the yin/yang "hot-cold" theory of illness;
- Sodium intake is generally high because of salted and dried foods;
- Usually refuse organ donation;
- May nod without necessarily understanding.

### 4. Latino Americans

- Family members are typically involved in all aspects of decision making such as terminal illness;
- May see no reason to submit to mammograms or vaccinations.

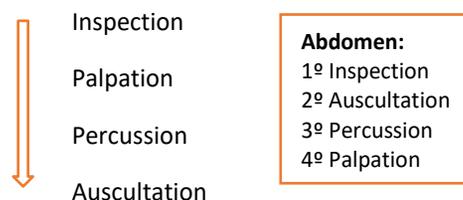
### 5. Native Americans

- Diet may be deficient in vitamin D and calcium because many suffer from lactose intolerance or don't drink milk;
- Obesity and diabetes are major health concerns.

## RELIGIOUS CONSIDERATIONS

- **Jehovah's Witness**: no blood products should be used.
- **Hindu**: no beef or items containing gelatin.
- **Jewish**: special dietary restrictions, use of kosher foods.
- **Adventists**: no pork nor alcohol and sometimes no meat.
- **Muslims**: no pork nor alcohol; people with chronic illnesses and women that are pregnant, breast-feeding or menstruating don't fast during Ramadan.

## ORDER OF ASSESSMENT: THINK HIPPA & HIAPP



## ABO BLOOD TYPE COMPATIBILITY

Blood Type	Can receive from:	Can donate to:
O	O	O, A, B, AB
A	A, O	A, AB
B	B, O	B, AB
AB	O, A, B, AB	AB

## TRACTIONS

- **Buck's traction:** knee immobility
- **Russell traction:** femur or lower leg
- **Dunlap traction:** skeletal or skin
- **Bryant's traction:** children <3y, <35 lbs with femur fracture.

## INFANT'S DEVELOPMENT:

- 2-3 months:** turns head side to side
- 4-5 months:** grasps, switch & roll
- 6-7 months:** sit at 6 and waves bye-bye
- 8-9 months:** stands straight at eight
- 10-11 months:** belly to butt (phrase has 10 letters)
- 12-13 months:** twelve and up, drink from a cup

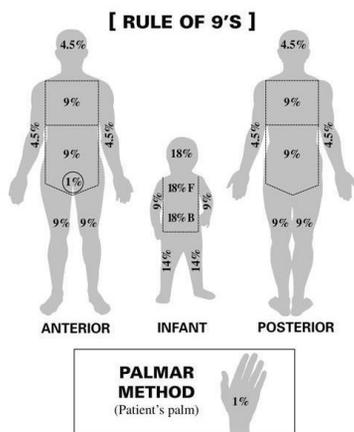
## ERIKSON'S STAGES OF PSYCHOSOCIAL DEVELOPMENT

AGE	STAGES	CHARACTERISTICS
<b>Infancy (0-18m)</b>	Trust vs. Mistrust	Development of trust based on caregivers
<b>Early childhood (18m-3yrs)</b>	Autonomy vs. Shame & doubt	Development of sense of personal control
<b>Preschool (3-5yrs)</b>	Initiative vs. Guilt	Development of sense of purpose and directive
<b>School age (6-11yrs)</b>	Industry vs. Inferiority	Development of pride in accomplishments
<b>Adolescence (12-18yrs)</b>	Identity vs. Role confusion	Exploration of independence and development of self
<b>Early adulthood (18-40yrs)</b>	Intimacy vs. Isolation	Development of personal relationships and love
<b>Adulthood (40-65yrs)</b>	Generativity vs. Stagnation	Fulfilling goals and building career and family
<b>Older adult (&gt;65yrs)</b>	Integrity vs. Despair	Looking back on life with acceptance

## BURNS

**Parkland formula:**  
4ml/kg/%body burned

- 1st 8h: ½ total volume
- 2<sup>nd</sup>/ 8h: ¼ total volume
- 3<sup>rd</sup> 8h: ¼ total volume



## CRANIAL NERVES (Sensory=S | Motor=M | Both=B)

Oh ( <b>Olfactory I</b> )	Some
Oh ( <b>Optic II</b> )	Say
Oh ( <b>Oculomotor III</b> )	Marry
To ( <b>Trochlear IV</b> )	Money
Touch ( <b>Trigeminal V</b> )	But
And ( <b>Abducens VI</b> )	My
Feel ( <b>Facial VII</b> )	Brother
A ( <b>Auditory VIII</b> )	Says
Girls ( <b>Glossopharyngeal IX</b> )	Big
Vagina ( <b>Vagus X</b> )	Bras
And ( <b>Accessory XI</b> )	Matter
Hymen ( <b>Hypoglossal XII</b> )	More

Cranial nerve	What it controls
I Olfactory	Smell test
II Optic	Visual acuity and visual fields
III Oculomotor	Pupil constriction and extraocular movements
IV Trochlear	Extraocular movements: inferior adduction
V Trigeminal	Clench teeth and light touch
VI Abducens	Extraocular movements: lateral abduction
VII Facial	Facial movement: close eyes, smile
VIII Auditory	Hearing and Romberg test
IX Glossopharyngeal	Gag reflex
X Vagus	Say "ah" – uvular and palate movement
XI Accessory	Turn head and lift shoulders to resistance
XII Hypoglossal	Stick out tongue

## PPE (Personal Protective Equipment)

### Don PPE

1. Hand hygiene
2. Gown
3. Mask
4. Goggles
5. Gloves

### Remove PPE

1. Gloves
2. Goggles
3. Gown
4. Mask
5. Hand hygiene

## TRANSMISSION-BASED PRECAUTIONS

### Hepatitis transmission:

#### Consonants (B, C, D):

- Blood and body fluids.

#### Vowels (A, E):

- Fecal and oral.

### Airborne: MTV

**M**easles

**T**B

**V**aricella (Chicken Pox/Herpes Zoster-Shingles)

## Droplet: SPIDERMAN

- Sepsis
- Scarlet fever
- Streptococcal pharyngitis
- Parvovirus B19
- Pneumonia
- Pertussis
- Influenza
- Diphtheria (pharyngeal)
- Epiglottitis
- Rubella
- Mumps
- Meningitis
- Mycoplasma or meningococcal pneumonia
- A(n)denovirus

## Contact: MRS.WEE

- Multidrug resistant organisms
- Respiratory infection
- Skin infections (\*VCHIPS)
- Wound infection
- Enteric infection (C. difficile)
- Eye infection (conjunctivitis)

- Varicella zoster
- Cutaneous diphtheria
- Herpes simplex
- Impetigo
- Pediculosis
- Scabies

## LABORATORY VALUES

- **BUN:** 7-20 mg/dL
- **Creatinine:** 0.6-1.3 mg/dL
- **Creatinine clearance:** 90-130 ml/min
- **Total cholesterol:** 140-199 mg/dL
- **HDL:** 30-70 mg/dL
- **LDL:** <130 mg/dL
- **Triglycerides:** <200 mg/dL
- **Protein:** 6-8 g/dL
- **Albumin:** 3.4-5 g/dL
- **Alanine aminotransferase (ALT):** 10-40 units/L
- **Aspartate aminotransferase (AST):** 10-30 units/L
- **Total Bilirubin:** <1.5 mg/dL
- **Uric acid:** 3.5-7.5 mg/dL
- **CPK:** 21-232 U/L
- **Glucose:** 70-110 mg/dL
- **Hemoglobin A1c:**
  - 4%-5.9%: nondiabetic
  - <7%: good diabetic control
  - 7% to 8%: fair diabetic control
  - >8%: poor diabetic control
- **Hemoglobin:**
  - Female: 12-15 g/dL
  - Male: 13-16.5 g/dL
- **Hematocrit:**
  - Female: 35%-47%
  - Male: 42%-52%
- **Platelets:** 150,000-400,000 cells/mm<sup>3</sup>
- **aPTT:**
  - 20-36 sec, depending on testing method
  - Therapeutic (Heparin): 46-70 seconds
- **Prothrombin time (PT):** 9.5-11.8 sec
- **International Normalized Ratio (INR):**
  - 2-3: standard warfarin therapy
  - 3-4.5: high-dose warfarin therapy

- **Erythrocytes (RBC):** 4.5-5.0 million/L
- **Leucocytes (WBC):** 4,500-10,000 cells/mm<sup>3</sup> (Neutropenia <1000/mm<sup>3</sup> / Severe neutropenia: <500/mm<sup>3</sup>)
- **Neutrophils:** 1800-7800 cells/mm<sup>3</sup>
- **Lymphocytes:** 1000-4800 cells/mm<sup>3</sup>
- **Potassium:** 3.5-5.0 mEq/L
- **Sodium:** 135-145 mEq/L
- **Chloride:** 96-108 mEq/L
- **Phosphate:** 3.4-4.5 mg/dL
- **Magnesium:** 1.6-2.6 mg/dL
- **Phosphorus:** 2.5-4.5 mg/dL
- **Calcium:** 8.4-10.2 mg/dL
- **Digoxin:** 0.8-2.0 ng/ml
- **Lithium:** 0.8-1.2 mEq/L
- **Phenytoin:** 10-20 mcg/dL
- **Theophylline (Aminophylline):** 10-20 mcg/dL

## ABG VALUES & EVALUATION

- **pH:** 7.35-7.45
- **HCO<sub>3</sub>:** 22-26 mEq/L
- **CO<sub>2</sub>:** 35-45 mEq/L
- **PaO<sub>2</sub>:** 70%-100%
- **SaO<sub>2</sub>:** >95%

**ROME**  
Respiratory – Opposite  
Metabolic – Equal

	Abnormality	pH	CO <sub>2</sub>	HCO <sub>3</sub>	Examples
Respiratory acidosis	Uncompensated	↓	↑	N	Severe asthma
	Partially compensated	↓	↑	↑	Pneumonia
	Fully compensated	N	↑	↑	Hypoventilation
Respiratory alkalosis	Uncompensated	↑	↓	N	Hyperventilation
	Partially compensated	↑	↓	↓	Panic attack
	Fully compensated	N	↓	↓	Aspirin poisoning
Metabolic acidosis	Uncompensated	↓	N	↓	Diabetic ketoacidosis
	Partially compensated	↓	↓	↓	Lactic acidosis
	Fully compensated	N	↓	↓	Alcohol, salicylate
Metabolic alkalosis	Uncompensated	↑	N	↑	Loss of acid: Severe vomiting
	Partially compensated	↑	↑	↑	
	Fully compensated	N	↑	↑	Loss of potassium

## HYPOKALEMIA

### Causes:

**“Your body is trying to DITCH potassium”**

Drugs (laxatives, diuretics, corticosteroids)

Inadequate consumption of K (NPO, anorexia).

Too much water intake (dilutes the K).

Cushing’s syndrome (the adrenal glands produce excessive amounts of aldosterone).

Heavy fluid loss (NG suction, vomiting, diarrhea, wound drainage, excessive diaphoresis).

### Signs & Symptoms:

**Everything is going to be SLOW and LOW.**

- Weak pulses (irregular and thread).
- Orthostatic hypotension.
- Shallow respirations with diminished breath sounds.
- Confusion and weakness.
- Flaccid paralysis.
- Decrease deep tendon reflexes.
- Decreased bowel sounds.

## HYPERKALEMIA/

### Causes:

**“The body CARED too much about potassium”**

Cellular movement of K from intracellular to extracellular (burns, tissue damages, acidosis).

Adrenal insufficiency with Addison’s Disease.

Renal failure.

Excessive K intake.

Drugs (K-sparing like spironolactone, triamterene, ACE inhibitors, NSAIDS).

### Signs & Symptoms (MURDER):

**M**uscle weakness.

**U**rine production little or none (renal failure).

**R**espiratory failure.

**D**ecreased cardiac contractility (weak pulse, low BP).

**E**arly signs of muscle twitches/cramp...Late profound weakness, flaccidity.

**R**hythm changes.

## HYPOCALCEMIA

### Causes (LOW CALCIUM):

Low parathyroid hormone due (any neck surgery: check the Ca level).

Oral intake inadequate (alcoholism, bulimia etc.).

Wound drainage (especially GI system).

Celiac’s & Crohn’s disease (malabsorption of Ca).

Acute pancreatitis.

Low vitamin D levels.

Chronic kidney issues (excessive excretion).

Increased phosphorus levels in the blood.

Using certain medications (Ma supplements, laxatives, loop diuretics, Ca binder drugs).

Mobility issues.

### Signs & Symptoms (CRAMPS):

**C**onfusion.

**R**eflexes: hyperactive.

**A**rrhythmias.

**M**uscle spasms in calves or feet, tetany, seizures.

**P**ositive Trousseau’s (happens before Chvostek’s sign and tetany).

**S**igns of Chvostek’s.

## HYPERCALCEMIA

### Causes (HIGH CAL):

Hyperparathyroidism (++) Ca released in the blood).

Increased intake of Ca.

Glucocorticoids (suppresses Ca absorption).

Hyperthyroidism.

Calcium excretion decreased (Diuretics, renal failure, bone cancer).

Adrenal insufficiency (Addison’s disease).

Lithium usage (affects the parathyroid gland).

### Signs & Symptoms:

**“The body is too WEAK”**

**W**eakness of muscles (profound).

**E**KG changes.

**A**bsent reflexes & minded (disorientated), **A**bdominal distention from constipation.

**K**idney stone formation.

## HYPONATREMIA

### Causes (NO Na):

**N**a excretion increased (renal problems, NG suction, vomiting, diuretics, sweating, diarrhea, ↓secretion of aldosterone).

**O**verload of fluid (congestive heart failure, hypotonic fluids infusions, renal failure).

**N**a intake low (low salt diets or NPO).

**A**ntidiuretic hormone over secretion (SIADH).

### Signs & Symptoms (SALT LOSS):

**S**eizures & **S**tupor.

**A**bdominal cramping, **A**ttitude changes (confusion).

**L**ethargic.

**T**endon reflexes diminished, **T**rouble concentrating (confused).

**L**oss of urine and appetite.

**O**rthostatic hypotension, **O**veractive bowel sounds.

**S**hallow respirations (due to skeletal muscle weakness).

**S**pasms of muscles.

## HYPERNATREMIA

### Causes (HIGH SALT):

**H**yperventilation, **H**ypercortisolism (Cushing’s syndrome).

**I**ncreased intake of sodium (oral or IV).

**G**I feeding (tube) without adequate water supplements.

**H**ypertonic solutions.

**S**odium excretion decreased and corticosteroids.

**A**ldosterone insufficiency.

**L**oss of fluids, infection (fever), ↑diaphoresis, diarrhea, and diabetes insipidus).

**T**hirst impairment.

### Signs & Symptoms:

**“No FRIED foods for you!”**

**F**ever, **F**lushed skin.

**R**estless, **R**eally agitated.

**I**ncreased fluid retention.

**E**dema, **E**xtrremely confused.

**D**ecreased urine output, **D**ry mouth/skin.

## HYPOPHOSPHATEMIA

### Causes (Low PHOSPHATE):

**P**harmacy (aluminum hydroxide-based or magnesium-based antacids cause malabsorption in the GI system).

**H**yperparathyroidism (there is an over secretion of PTH which causes phosphate to not be reabsorbed).

**O**ncogenic osteomalacia.

**S**ndrome of Refeeding: causes electrolytes and fluid problems due to malnutrition or starvation (watch for *per os* after TPN).

**P**ulmonary issues such as respiratory alkalosis.

Hyperglycemia.  
 Alcoholism.  
 Thermal Burns.  
 Electrolyte imbalances: hypercalcemia, hypomagnesemia, hypokalemia.

**Signs & Symptoms (BROKEN):**

Breathing problems (due to muscle weakness).  
 Rhabdomyolysis (tea-colored urine, muscle weakness/pain),  
 Reflexes (deep tendon) decreased.  
 Osteomalacia (softening of the bones) fractures and decreased bone density (alteration in bone shape), cardiac Output decreased.  
 Kills immune system with immune suppression and decreases platelet aggregation.  
 Extreme weakness, Ecchymosis.  
 Neuro status changes (irritability, confusion, seizures).

**HYPERPHOSPHATEMIA**

**Causes (PHOS-HI):**

Phospho-soda overuse: phosphate containing laxatives or enemas (Sodium Phosphate/Fleets enema).  
 Hypoparathyroidism.  
 Overuse of vitamin D.  
 Syndrome of Tumor Lysis.  
 rhabdomyolysis.  
 Insufficiency of kidneys (renal failure is the main cause).

**Signs & Symptoms (CRAMPS):**

Confusion.  
 Reflexes hyperactive.  
 Anorexia.  
 Muscle spasms in calves or feet, tetany, seizures.  
 Positive Trousseau's Signs, Pruritus.  
 Signs of Chvostek.

**HYPOMAGNESEMIA**

**Causes (LOW MAG):**

Limited intake of Mg (starvation).  
 Other electrolyte issues (hypokalemia, hypocalcemia).  
 Wasting Magnesium kidneys (loop and thiazide diuretics; cyclosporine).  
 Malabsorption issues (Crohn's and celiac diseases, "-prazole" drugs, diarrhea/vomiting).  
 Alcohol (stimulates the kidneys to excreted Mg).  
 Glycemic issues (diabetic ketoacidosis, insulin administration).

**Signs & Symptoms (TWITCHING):**

Trousseau's (positive due to hypocalcemia).  
 Weak respirations.  
 Irritability.  
 Torsades de pointes, Tetany (seizures).  
 Cardiac changes, Chvostek's sign.  
 Hypertension, Hyperreflexia.  
 Involuntary movements.  
 Nausea.  
 GI issues (decreased bowel sounds and mobility).

**HYPERMAGNESEMIA**

**Causes (MAG)\*:**

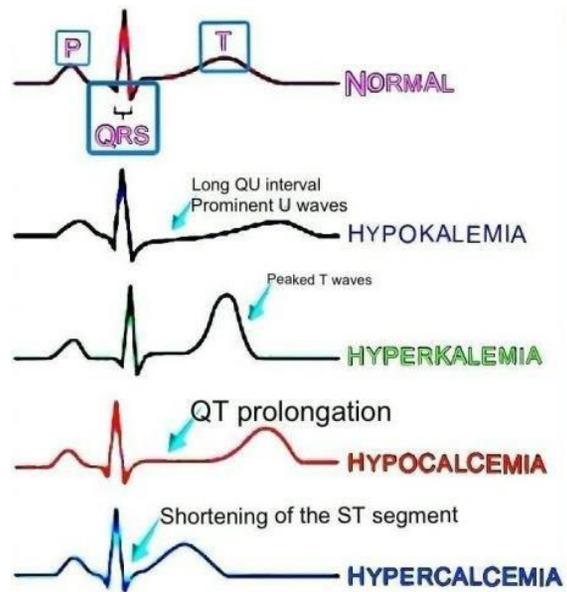
Magnesium containing antacids and laxatives.  
 Addison's disease (adrenal insufficiency).  
 Glomerular filtration insufficiency (<30mL/min).

\*Hypermagnesemia is less common than hypomagnesemia. It typically happens when trying to correct hypomagnesemia with magnesium sulfate IV infusion.

**Signs & Symptoms (LETHARGIC)\*:**

\*Happens in severe hypermagnesemia, mild one is asymptomatic.  
 Lethargy (profound).  
 EKG changes (prolonged PR & QR interval and widened QRS complex).  
 Tendon reflexes absent or grossly diminished.  
 Hypotension.  
 Arrhythmias (bradycardia, heart blocks).  
 Respiratory arrest.  
 GI issues (nausea, vomiting).  
 Impaired breathing (due to skeletal weakness).  
 Cardiac arrest.

**EKG CHANGES IN ELECTROLYTE IMBALANCES**



**FOOD SOURCES OF WATER-SOLUBLE VITAMINS**

- **Folic acid:** green leafy vegetables, liver, beef and fish, legumes, grapefruit and oranges.
- **Niacin:** meats, poultry, fish, beans, peanuts, grains.
- **Vitamin B<sub>1</sub> (thiamine):** pork, nuts, whole-grain cereals, legumes.
- **Vitamin B<sub>2</sub> (riboflavin):** milk, lean meats, fish, grains.
- **Vitamin B<sub>6</sub> (pyridoxine):** yeast, corn, meat, poultry, fish.
- **Vitamin B<sub>12</sub> (cobalamin):** meat, liver.
- **Vitamin C (ascorbic acid):** citrus fruits, tomatoes, broccoli, cabbage.

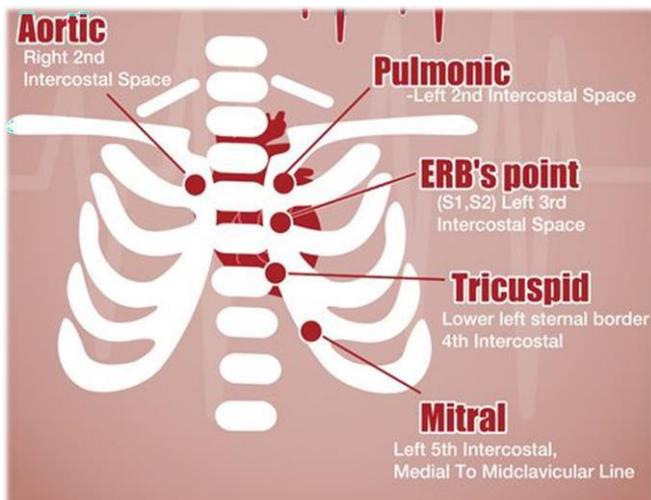
## FOOD SOURCES OF FAT-SOLUBLE VITAMINS

- **Vitamin A:** liver, egg yolk, whole milk, green or orange vegetables, fruits.
- **Vitamin D:** fortified milk, fish oils, cereals.
- **Vitamin E:** vegetable oils, green leafy vegetables, cereals, apricots, apples, peaches.
- **Vitamin K:** green leafy vegetables, cauliflower, cabbage.

## FOOD SOURCES OF MINERALS

- **Calcium:** broccoli, carrots, cheese, collard greens, green beans, milk, rhubarb, spinach, tofu, yogurt.
- **Chloride:** salt.
- **Iron:** bread and cereals, dark green vegetables, dried fruits, egg yolk, legumes, liver, meats.
- **Magnesium:** avocado, canned white tuna, cauliflower, cooked rolled oats, green leafy vegetables, milk, peanut butter, peas, pork, beef, chicken, potatoes, raisins, yogurt.
- **Phosphorus:** fish, nuts, organ meats, pork, beef, chicken, whole-grain bread and cereals.
- **Potassium:** avocado, banana, cantaloupe, carrots, fish, mushrooms, oranges, pork, beef, veal, potatoes, raisins, spinach, strawberries, tomatoes.
- **Sodium:** American cheese, bacon, butter, canned food, cottage cheese, cured pork, hot dogs, ketchup, milk, mustard, processed food, soy sauce, table salt, white and whole-wheat bread.
- **Zinc:** eggs, leafy vegetables, meats, protein-rich foods.

## HEART AUSCULTATION



## ADVENTITIOUS BREATH SOUNDS

- **Crackles:** High pitched and heard during inspiration. Not cleared by cough. Discontinuous. Clinical examples include pneumonia, heart failure, asthma, restrictive pulmonary diseases; if coarse crackles: pulmonary edema and pulmonary fibrosis and also in patients terminally ill with diminished gag reflex.
- **Rhonchi:** Rumbling, course sounds like a snore. Heard during inspiration or expiration. May clear with coughing or suctioning. Continuous. Heard in patients with chronic bronchitis.
- **Wheezes:** musical noise during inspiration or expiration. Usually louder during expiration. May clear with cough. Continuous. Heard in patients with asthma.

- **Pleural friction rub:** Superficial, low pitched, coarse rubbing or grating sound (two surfaces rubbing each other). Heard throughout inspiration or expiration. Not cleared by cough. Heard in patients with pleurisy.

## VENTILATOR ALARMS

### High-pressure alarm:

- Increased secretions are in the airway.
- Wheezing or bronchospasm is causing decreased airway size.
- The endotracheal tube is displaced.
- The ventilator tube is obstructed because of water or a kink in the tubing.
- Patient coughs, gags, or bites on the oral endotracheal tube.
- Client is anxious or fights the ventilator.

### Low-pressure alarm:

- Disconnection or leak in the ventilator or in the patient's airway cuff occurs.
- The patient stops spontaneous breathing.

## CHEST TUBES

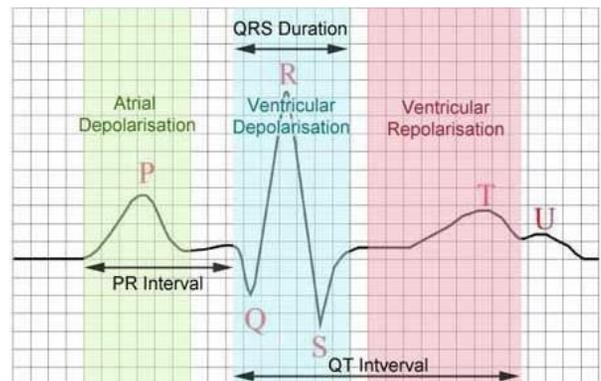
### Suction control chamber

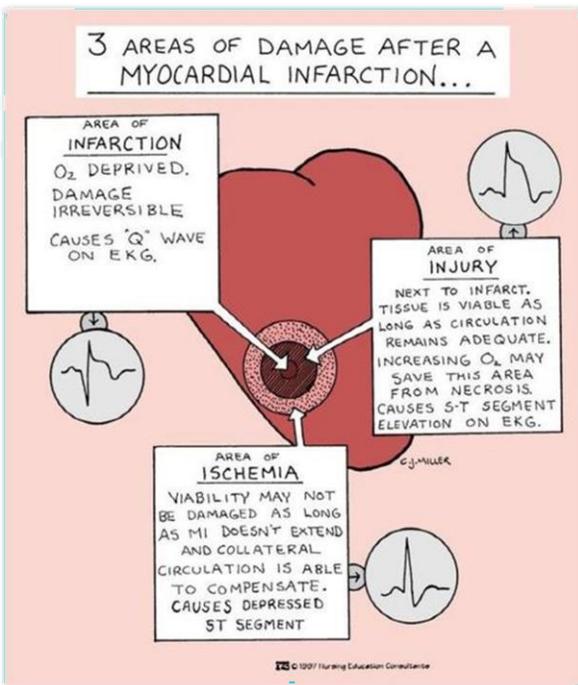
- Gentle bubbling indicates that there is suction and does not indicate that air is escaping from the pleural space.

### Water seal chamber

- Water oscillates (up as the client inhales and down as the client exhales).
- Intermittent bubbling is expected in a patient with pneumothorax.
- Continuous bubbling indicates an air leak in the chest tube system.

## ELECTROCARDIOGRAM (EKG)





Reversible causes of asystole/pulseless electrical activity	
5 Hs	5 Ts
Hypovolemia	Tension pneumothorax
Hypoxia	Tamponade (cardiac)
Hydrogen ions (acidosis)	Toxins (narcotics, benzodiazepines)
Hypokalemia or Hyperkalemia	Thrombosis (pulmonary or coronary)
Hypothermia	Trauma

#### EXPECTED DATE OF DELIVERY (EDD)

1<sup>st</sup> day of the last menstrual period

**Naegle's rule:** + 7 days

- 3 months

e.g. Sep 13<sup>th</sup> – Sep 20<sup>th</sup> – Jun 20<sup>th</sup>

#### PREGNANCY OUTCOME – GTPAL

**G** – gravidity

**T** – term births

**P** – preterm births

**A** – abortions or miscarriages

**L** – current living children

#### TORCH INFECTIONS

**T**oxoplasmosis

**O**ther (Hepatitis, Syphilis, HIV)

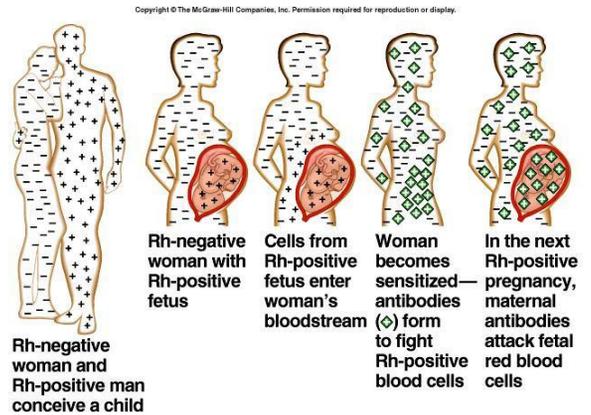
**R**ubella

**C**ytomegalovirus

**H**erpes simplex

They cause the worst damage during the 1<sup>st</sup> trimester.

#### Rh<sup>o</sup> IMMUNE GLOBULIN



- It is administered (IM route) at 28 weeks of gestation and again within 72 hours after delivery.

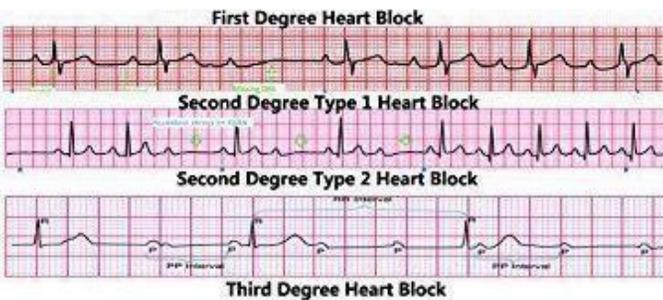
- It should also be administered within 72 hours after potential or actual exposure to Rh<sup>+</sup> blood and must be given with each subsequent exposure to Rh<sup>+</sup> blood.

⇒ **Folic acid** should be started 3 months before the woman becomes pregnant; it decreases the incidence of neural tube defects.

⇒ **Warfarin** is teratogenic (especially in the 1<sup>st</sup> trimester).

**Heparin** is not.

Common & Formal Rhythm Names	6 Second Rhythm Strip	Identifiers
<b>V-Fib</b> Ventricular Fibrillation		Irregular, No P Wave, No QRS
<b>V-Tach</b> Ventricular Tachycardia		Regular, No P Wave, Wide QRS
<b>Torsade de Pointes</b> Type Of Ventricular Tachycardia		Irregular, No P Wave, Wide QRS
*Synchronized Cardioversion possible for SVT if medication ineffective.		
<b>SVT*</b> Supraventricular Tachycardia		Regular, P Wave Hidden, Normal QRS
<b>STEMI</b> ST Elevation Myocardial Infarction		Reg or Irreg, P Wave, ST Elevated
<b>A-Fib</b> Atrial Fibrillation		Irregular, No P Wave, Normal QRS
<b>A-Flutter</b> Atrial Flutter		Reg or Irreg, No P Wave, Normal QRS
<b>PVC</b> Premature Ventricular Contraction		Irregular, No P Wave, Wide QRS
<b>Sinus Brady</b> Sinus Bradycardia		Regular, P Wave, Normal QRS
<b>Sinus Tach</b> Sinus Tachycardia		Regular, P Wave, Normal QRS
<b>NSR</b> Normal Sinus Rhythm		Regular, P Wave, Normal QRS



**PREDISPOSING CONDITIONS FOR DISSEMINATED INTRAVASCULAR COAGULATION (DIC)**

- Abruptio placentae
- Amniotic fluid embolism
- Gestational hypertension
- Intrauterine fetal death
- Liver disease
- Sepsis

**DRUGS USED TO STOP PRETERM LABOR: TOCOLYTICS**

“It’s not my time”

- I**ndomethacin (NSAID)
- N**ifedipine (Calcium channel blocker)
- M**agnesium sulfate
- T**erbutaline

**STAGES OF LABOR**

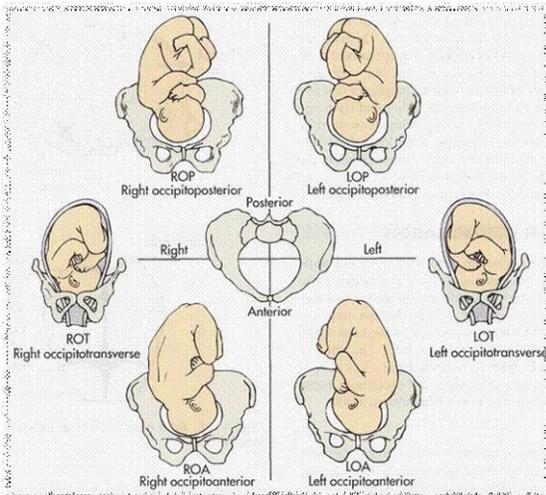
- 1<sup>st</sup> stage:** Cervical dilation
  - Begins with onset of regular contractions and ends with complete dilation.
  - Latent (0-3cm)/Active (4-7cm)/Transitional (8-10cm)
- 2<sup>nd</sup> stage:** Expulsion
  - Begins with complete dilation and ends with delivery of fetus.
- 3<sup>rd</sup> stage:** Placental
  - Begins immediately after fetus is born and ends when the placenta is delivered.
- 4<sup>th</sup> stage:** maternal homeostatic stabilization
  - Begins after the delivery of the placenta and continues for 1-4 hours after delivery.

<p><b>PLACENTA PREVIA</b></p> <ul style="list-style-type: none"> <li>- Painless bright red vaginal bleeding.</li> <li>- Soft uterus.</li> <li>- Vaginal exams are contraindicated.</li> </ul>	<p><b>ABRUPTIO PLACENTAE</b></p> <ul style="list-style-type: none"> <li>- Dark red vaginal bleeding.</li> <li>- Uterine pain and/or tenderness.</li> <li>- Uterine rigidity.</li> </ul>
---	---

**FETAL ACCELERATIONS AND DECELERATIONS**

- V**ariable decelerations      **C**ord compression
- E**arly decelerations        **H**ead compression
- A**ccelerations                **O**kay!
- L**ate accelerations         **P**lacental insufficiency

**FETAL PRESENTATIONS**



**FETAL HEART RATE:** 120-160bpm (variability 6-10bpm)  
**CONTRACTIONS:** 2-5 minutes apart with duration of <90 seconds and intensity of <100 mmHg.  
**AVA:** the umbilical cord has 2 arteries and 1 vein.

**NORMAL POSTPARTUM VITAL SIGNS**

- **Temperature:** may increase to 100.4°F during the first 24h postpartum because of dehydrating effects of labor. Any higher elevation may be caused by infection and must be reported.
- **Heart rate:** may decrease to 50bpm (normal puerperal bradycardia); >100bpm may indicate excessive blood loss or infection.
- **Blood pressure:** should be normal; suspect hypovolemia if it decreases.
- **Respiratory rate:** rarely changes; if it increases significantly, suspect pulmonary embolism, uterine atony or hemorrhage.

**STOP**

- This is the treatment for maternal hypotension after an epidural anesthesia:
  1. Stop oxytocin if infusing.
  2. Turn the client on the left side.
  3. Administer oxygen.
  4. If hypovolemia is present, push IV fluids.

**PREGNANCY CATEGORY OF DRUGS**

- **Category A:** No risk in controlled human studies
- **Category B:** No risk in other studies.
- **Category C:** Risk not ruled out.
- **Category D:** Positive evidence of risk.
- **Category X:** Contraindicated in Pregnancy.
- **Category N:** Not yet classified.

**ANTIBIOTICS CONTRAINDICATED DURING PREGNANCY (MCATO)**

- M**etronidazole\* ⇒ hepatic failure
- C**hloramphenicol ⇒ gray baby syndrome
- A**minoglycosides ⇒ ototoxicity
- T**etracyclines ⇒ teeth discoloration & liver failure
- O**thers ⇒ Nitrofurantoin, Quinolones & sulfonamides
- \*relatively contraindicated

**MAGNESIUM SULFATE** is used to stop preterm labor and to prevent and control seizures in pre-eclamptic and eclamptic patients. It decreases the urine output, deep tendon reflexes, respiratory rate and blood pressure.

**APGAR**

- A**ppearance
- P**ulse
- G**rimace
- A**ctivity
- R**espiration

**Score interventions:**

- 8-10:** no intervention required expect to support newborn’s spontaneous efforts.
- 4-7:** stimulate; rub newborn’s back; administer oxygen, rescore at specific intervals.
- 0-3:** requires full resuscitation; rescore at specific intervals.

## FONTANELS

- **Anterior:** closes between 12-18 months of age.
- **Posterior:** closes between birth-2/3 months of age.

## SIGNS OF A POSSIBLE HEART DEFECT (CORBIN)

- Color:** bluish skin or extremities.
- O<sub>2</sub>:** low pulse oximetry percentage.
- Rhythm:** abnormal heart rate.
- Breathing:** heavy or labored.
- Increase** in sweat, especially on the forehead.
- Nursing:** trouble feeding and breathing at the same time or poor appetite.

## IMMUNIZATIONS SCHEDULE

<b>Birth</b>	HepB *Vitamin K
<b>2, 4, 6 months</b> <b>DIHHR (diaper)</b>	DTaP IPV (6-18 months) HepB (2 & 4 months) Hib PCV Rotavirus *6 months: influenza yearly
<b>12-15 months</b> <b>Harry V. Potter, MD</b>	Hib Varicella PCV MMR DTaP (15-18 months) *HepA (12-23 months: 2 doses w/ at least a 4 week interval)
<b>4-6 y/o</b> <b>I did my vaccines</b>	IPV DTaP MMR Varicella
<b>11-12 y/o</b> <b>Don't have money here</b>	DTaP HPV Meningococcal HPV (1 <sup>st</sup> : 11-12 y/o; 2 months after 1 <sup>st</sup> ; 6 months after 1 <sup>st</sup> / up to age 26)
<b>Adult</b> <b>Don't HIT the adult</b>	Influenza yearly TDaP q 10 years
<b>Elderly</b> <b>Don't break your HIP</b>	Herpes Zoster (≥60 y/o) Influenza yearly Pneumovax-23

## SAFETY PRINCIPLES REGARDING TOYS

- No small toys for children under age 4 y/o.
- No metal (dycast) toys if O<sub>2</sub> is in use (sparks).
- Beware of fomites (they harbor bacteria - stuffed animal is a fomite).
- For a child ≤9 months, do not pick any of the answers with the words: build, make, construct, sort, stack.

## COMPARTMENT SYNDROME

- It occurs when excessive pressure builds up inside an enclosed muscle space in the body.
  - It usually results from bleeding or swelling after an injury.
  - The dangerously high pressure in compartment syndrome impedes the flow of blood to and from the affected tissues.
- Causes:**
- Trauma, especially when it results in shock.
  - Abdominal surgery, particularly liver transplant.
  - Burns
  - Sepsis.
  - Severe ascites or abdominal bleeding.
  - Pelvic fracture.
  - Vigorous eccentric abdominal exercises (i.e. sit-ups on a back extension machine in weight rooms).

## Five Ps of fractures and compartment syndrome:

- Pain.**
- Pallor.**
- Pulselessness.**
- Paresthesia.**
- Polar (cold).**

## FIVE Fs OF GALLBLADDER DISEASE:

- Fair.**
- Fat.**
- Forty y/o.**
- Five pregnancies.**
- Flatulent.**
- \*But it can occur in all ages and both sexes.

## ADDISON'S & CUSHING'S DISEASE

Addison's		Cushing's	
Down	Hyponatremia	Up	Hypnatremia
Down	Hypotension	Up	Hypertension
Down	Hypovolemia	Up	Hypervolemia
Up	Hyperkalemia	Down	Hypokalemia
Down	Hypoglycemia	Up	Hyperglycemia

## Signs & Symptoms

Addison's	Cushing's
Dark pigmentation	Prone to infection
↓resistance to stress	Muscle wasting
Fractures	Weakness
Alopecia	Edema
Weight loss	Hypertension
GI distress	Hirsutism
	Moonface/Buffalo hump
<b>Need to ADD hormone</b>	<b>Have extra CUSHION of hormones</b>

## Treatment:

- **Addison's:** ↑Na intake; medications include mineral corticoids.
- **Cushing's:** ↓Na intake; observe for signs of infection.

### **Addison's extra:**

⇒ Managing stress is paramount, because if the adrenal glands are stressed further it could result in Addisonian crisis.

⇒ Blood pressure is the most important assessment parameter, as it causes severe hypotension.

**Addisonian crisis:** nausea & vomiting, confusion, abdominal pain, extreme weakness, hypoglycemia, dehydration, hypotension.

**\*Neutropenic patients** should not receive vaccines, fresh fruits, or flowers.

### **TREATMENT FOR SPIDER BITES/BLEEDING (RICE)**

**R**est.

**I**ce.

**C**ompression.

**E**levate extremity.

### **TREATMENT FOR SICKLE CELL CRISES (HHOP)**

**H**eat.

**H**ydration.

**O**xygen.

**P**ain medications.

### **POSITIONING PATIENTS**

- **Asthma:** orthopneic position where patient is sitting up and bent forward with arms supported on a table or chair arms.
- **Post bronchoscopy:** flat on bed with head hyperextended.
- **Cerebral aneurysm:** high Fowler's.
- **Hemorrhagic stroke:** HOB elevated 30° to reduce ICP and facilitate venous drainage.
- **Ischemic stroke:** HOB flat.
- **Cardiac catheterization:** keep site extended.
- **Epistaxis:** lean forward.
- **Above knee amputation:** elevate for first 24h on pillow, position on prone daily for hip extension.
- **Below knee amputation:** foot of bed elevated for first 24h, position prone daily for hip extension.
- **Tube feeding for patients with decreased LOC:** position patient on right side to promote emptying of the stomach with HOB elevated to prevent aspiration.
- **Air/Pulmonary embolism:** turn patient to left side and lower HOB.
- **Postural drainage:** lung segment to be drained should be in the uppermost position to allow gravity to work.
- **Post lumbar puncture:** patient should lie flat in supine to prevent headache and leaking of CSF.
- **Continuous Bladder Irrigation (CBI):** catheter should be taped to thigh so legs should be kept straight.
- **After myringotomy:** position on the side of affected ear after surgery (allows drainage of secretion).
- **Post cataract surgery:** patient will sleep on unaffected side with a night shield for 1-4 weeks.
- **Detached retina:** area of detachment should be in the dependent position.
- **Post thyroidectomy:** low or semi- Fowler's, support head, neck and shoulders.

- **Thoracentesis:** sitting on the side of the bed and leaning over the table (during procedure); affected side up (after procedure).

- **Spina bifida:** position infant on prone so that sac does not rupture.

- **Buck's traction:** elevate foot of bed for counter-traction.

- **Post total hip replacement:** don't sleep on operated side, don't flex hip more than 45-60° and don't elevate HOB more than 45°; maintain hip abduction by separating thighs with pillows.

- **Prolapsed umbilical cord:** knee-chest position or Trendelenburg.

- **Cleft-lip:** position on back or in infant seat to prevent trauma to the suture line; while feeding, hold in upright position.

- **Cleft-palate:** prone.

- **Hemorrhoidectomy:** assist to lateral position.

- **Hiatal hernia:** upright position.

- **Preventing Dumping syndrome:** eat in reclining position, lie down after meals for 20-30min (also restrict fluids during meals, low fiber diet, and small frequent meals).

- **Enema administration:** position patient in left-side lying (Sim's position) with knees flexed.

- **Post supratentorial surgery (incision behind hairline):** elevate HOB 30-45°.

- **Post infratentorial surgery (incision at nape of neck):** position patient flat and lateral on either side.

- **Increased ICP:** high Fowler's.

- **Laminectomy:** back as straight as possible; log roll to move and sand bag on sides.

- **Spinal cord injury:** immobilize on spine board, with head in neutral position; immobilize head with padded C-collar, maintain traction and alignment of head manually; log roll patient and do not allow patient to twist or bend.

- **Liver biopsy:** right side lying with pillow or small towel under puncture site for at least 3h.

- **Paracentesis:** flat on bed or sitting.

- **Intestinal tubes:** place patient on right side to facilitate passage into duodenum.

- **Nasogastric tubes:** elevate HOB 30° to prevent aspiration. Maintain elevation for continuous feeding or 1h after intermittent feedings.

- **Pelvic exam:** lithotomy position.

- **Rectal exam:** knee-chest position, Sim's, or dorsal recumbent.

- **During internal radiation:** patient should be on bed rest while implant is in place.

- **Autonomic dysreflexia:** place patient in sitting position (elevate HOB) first before any other implementation.

- **Shock:** bed rest with extremities elevated 20°, knees straight, head slightly elevated (modified Trendelenburg).

- **Head injury:** elevate HOB 30° to decrease intracranial pressure.

- **Peritoneal dialysis when outflow is inadequate:** turn patient side to side before checking for kinks in the tubing.

- **Myelogram:**

- **Water-based dye:** semi-Fowler's for at least 8h.

- **Oil-based dye:** flat on bed for at least 6-8h to prevent leakage of CSF.

- **Air dye:** Trendelenburg.

**STAIRS WITH CANE/CRUTCHES:**

**"Up with the good, down with the bad"**

- **Going up:** "good" leg first, crutches, "bad" leg.
- **Going down:** crutches with "bad" leg, then "good" leg.

**LEAD POISONING S/S (ABCDEF):**

- A**nemia.
- B**asophilic stripping.
- C**olicky pain.
- D**iarrhea.
- E**ncephalopathy.
- F**oot drop.
- G**um (lead line).

**NEUROLEPTIC MALIGNANT SYNDROME (FEVER):**

- F**ever.
- E**ncephalopathy.
- V**itals unstable.
- E**levated enzymes (CPK).
- R**igidity of muscles.

DIABETES INSIPIDUS	SIADH
<ul style="list-style-type: none"> <li>- Low ADH, low water in body.</li> <li>- Polyuria.</li> <li>- Hypernatremia.</li> <li>- High hemoglobin, hematocrit and serum osmolality from dehydration.</li> <li>- <b>Risk:</b> hypovolemic shock.</li> <li>- <b>TX:</b> DDAVP (ADH).</li> </ul>	<ul style="list-style-type: none"> <li>- High ADH, water intoxication.</li> <li>- Oliguria.</li> <li>- Hyponatremia.</li> <li>- Low serum osmolality.</li> <li>- Weight gain.</li> <li>- <b>Risk:</b> seizures.</li> <li>- <b>TX:</b> fluid restriction.</li> </ul>

**ANTICHOLINERGIC SIDE EFFECTS**

**"Know the ABCD'S of anticholinergic side effects"**

- A**norexia.
- B**lurry vision.
- C**onstipation/**C**onfusion.
- D**ry Mouth.
- S**edation/**S**tasis of urine.

**STEPS TO USE A METERED DOSE INHALER**

1. Shake the inhaler well before use (3/4x).
2. Remove the cap.
3. Breathe out, away from the inhaler.
4. Bring the inhaler to your mouth, place it between your teeth and close your mouth around it.
5. Start to breathe slowly. Press the top of the inhaler once and keep breathing in slowly until you have taken a full breath (3-5s).
6. Remove the inhaler from your mouth and hold your breath for about 10s, then breathe out.

**INCENTIVE SPIROMETRY STEPS**

1. Sit upright.
2. Exhale.
3. Insert mouthpiece.
4. Inhale for 3 seconds.
5. Hold for 10 seconds.

**ELEVATED INTRACRANIAL PRESSURE & SHOCK**

	ICP	SHOCK
<b>Blood pressure</b>	↑	↓
<b>Heart rate</b>	↓	↑
<b>Respiratory rate</b>	↓	↑

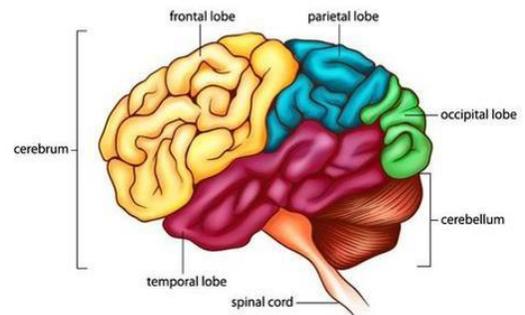
**DIABETIC KETOACIDOSIS TREATMENT (KING UFC)**

- K**<sup>+</sup>.
- I**nsulin.
- N**asogastric tube: if comatose.
- G**lucose: once serum levels drop.
- U**rea: monitoring.
- F**luids: crystalloids.
- C**reatinine: monitor and catheterize.

**VERTEBRAL INJURIES**

Vertebrae	Effect
<b>C3 and above</b>	Unable to care for self, life-sustaining ventilator is essential.
<b>at C6</b>	May use a lightweight wheelchair; feed self with devices; write and care for self; transfer from chair to bed.
<b>at C7</b>	Can dress legs; minimal assistance needed; independence in wheelchair; can drive car with hand controls.
<b>at T1-T4</b>	Some independence from wheelchair; long-leg braces for standing exercises.
<b>at L3-L4</b>	May use crutches or canes for ambulation.

**BRAIN STRUCTURES AND THEIR FUNCTIONS**



STRUCTURE	FUNCTIONS
<b>FRONTAL:</b>	Behaviour, Intelligence, Memory, Movement.
<b>PARIENTAL:</b>	Intelligence, language, Reading, Sensation.
<b>OCCIPITAL:</b>	Visual Processing and Spatial-Orientation.
<b>CEREBELLUM:</b>	Balance, Swallowing, Breathing, Heartbeat.
<b>TEMPORAL:</b>	Speech, Vision, Hearing, Long-Term Memory.

### LEFT CEREBROVASCULAR ACCIDENT

- Paralyzed right side hemiplegia.
- Impaired speech and language.
- Slow performance.
- Visual field deficits.
- Aware of deficits: depression, anxiety.
- Impaired comprehension.

### RIGHT CEREBROVASCULAR ACCIDENT

- Paralyzed left side hemiplegia.
- Spatial-perceptual deficits.
- Tends to minimize problems.
- Short attention span.
- Visual field deficits.
- Impaired judgement.
- Impulsive.
- Impaired time concept.

### CONGESTIVE HEART FAILURE S/S

LEFT SIDE (FORCED)	RIGHT SIDE (BACONED)
Fatigue.	Bloating.
Orthopnea.	Anorexia.
Rales/Restlessness.	Cyanosis/Cool legs.
Cyanosis/Confusion.	Oliguria.
Extreme weakness.	Nausea.
Dyspnea.	Edema.
	Distended neck veins.

### CONGESTIVE HEART FAILURE TX (UNLOAD FAST)

- Upright position.
- Nitrates.
- Lasix (Furosemide).
- Oxygen.
- ACE inhibitors.
- Digoxin.
- Fluids (decrease).
- Afterload (decrease).
- Sodium restriction.
- Test (digoxin level, ABGs, K level).

### THERAPEUTIC DIETS

- **Acute renal disease:** protein-restricted, high-calorie, fluid-controlled, Na and K controlled.
- **Addison's disease:** high sodium, low potassium.
- **ADHD and bipolar:** high-calorie and provide finger foods.
- **Anemia:** high protein/iron/vitamins.
- **Atherosclerosis:** low saturated fats.
- **Burns:** high protein, high caloric, ↑Vitamin C.
- **Cancer:** high-calorie, high-protein.
- **Celiac disease:** gluten-free (no BROW: wheat, oats, rye, barley).
- **Cholecystitis/Cholelithiasis:** low fat liquids, powder supplements high in protein/carb into skim milk; avoid fried foods, pork, cheese, alcohol.
  - After surgery may need low fat diet for several weeks.
  - Low fat, high carb/protein.
- **Chronic renal disease:** protein-restricted, low-sodium, fluid-restricted, potassium-restricted, phosphorus-restricted.
- **Cirrhosis (stable):** normal protein.

- **Cirrhosis with hepatic insufficiency:** restrict protein, fluids, and sodium.
- **Constipation:** high-fiber, increased fluids.
- **COPD:** soft, high-calorie, low-carbohydrate, high-fat, small frequent feedings.
- **Cushing's disease:** low sodium, high potassium.
- **Cystic fibrosis:** increase in fluids; pancreatic enzyme replacement before or with meals; high protein, high calorie in advanced stages.
- **Diarrhea:** liquid, low-fiber, regular, fluid and electrolyte replacement.
- **Diverticular disease:** high-fiber, avoid seeds.
- **Dumping syndrome (rapid passage of food: diaphoresis, diarrhea, hypotension):** restrict fluids w/ meals, drink 1h before or 1h after; eat in recumbent position, lie down 20-30 min after eating; small frequent meals; low-carb/low-fiber.
- **Gallbladder disease:** low-fat, calorie-restricted.
- **Gastritis:** low-fiber, bland diet.
- **Gout:** low purine (no fish and organ meats).
- **Hepatitis:** regular, high-calorie, high-protein.
- **Hepatobiliary:** low-fat, high protein, vitamins.
- **Hirschsprung's disease:** low fiber, high calorie/protein before surgery.
- **Hypertension, heart failure, CAD:** low-sodium, calorie-restricted, fat-controlled.
- **Kidney stones:** increased fluid intake, calcium-controlled, low-oxalate.
- **Meniere's:** low sodium, avoid caffeine, nicotine and alcohol.
- **Nephrotic syndrome:** sodium-restricted, high-calorie, high-protein, potassium-restricted.
- **Obesity/Overweight:** calorie-restricted, high-fiber .
- **Ostomy:** high calorie/protein/carb; low residue before surgery.
  - **Ileostomy:** low residue diet, no meats, corn, nuts.
  - **Colostomy:** diet not restricted after 6 weeks.
- **Pancreatitis:** low-fat, regular, small frequent feedings; tube feeding or total parenteral nutrition.
- **Peptic ulcer:** bland diet.
- **Pernicious anemia:** ↑Vitamin B12.
  - IM B12 shot (25-100 µg), followed by 500-1000 µg shot every 1-2 months or cyanocobalamin nasal spray.
- **Phenylketonuria (PKU):** special milk substitutes for infants, low protein for children.
- **Pheochromocytoma:** increase calories, vitamins and minerals intake; avoid coffee, tea, cola, tyramine foods.
- **Sickle cell anemia:** increase fluids to maintain hydration since sickling increases when patients become dehydrated.
- **Stroke:** mechanical soft, regular, or tube-feeding.
- **Underweight:** high-calorie, high protein.
- **Ulcerative colitis & Crohn's disease:** high protein/calorie; low fat/fiber.
- **Ulcers:** 3 meals/day, avoid T<sup>9</sup> extremes, avoid caffeine/alcohol/milk&cream.
  - **Postoperative:** Vit B12 parenteral for life and iron supplements.
- **Vomiting:** fluid and electrolyte replacement.

**TOP NCLEX HERBS**

**St. John' Wort:** treats depression/anxiety.

- Interacts with SSRI.
- Causes sun sensitivity.

**Garlic:** lowers blood pressure and cholesterol levels.

- Interacts with aspirin and warfarin.

**Ginkgo Biloba:** improves memory.

- Thins the blood (don't take with aspirin or warfarin).
- Do not take with history of seizures.

**Echinacea:** immune-boosting function

- Can cause liver toxicity in renal patients.
- Not effective with HIV.

**Ginger:** Relieves nausea and vomiting.

- Do not take if history of deep venous thrombosis.
- Interacts with blood thinners.

**Black Cohosh:** treats menopausal symptoms.

- Contraindicated in pregnancy (causes premature labor).

**Kava Kava:** treats insomnia and muscle pain.

- It's associated with liver illnesses.

**Saw Palmetto:** used for prostate health.

- No specific patient teaching.
- \* If it starts with G, it thins the blood. Do not give with warfarin, aspirin and heparin.

**COMMON**

**ANTIDOTES**

<b>Warfarin</b> .....	Vitamin K
<b>Benzodiazepines</b> .....	Flumanezil
<b>Heparin</b> .....	Protamine Sulfate
<b>Opioids</b> .....	Naloxone
<b>Anticholinergics</b> .....	Physostigmine
<b>Beta Blockers</b> .....	Glucagon
<b>Methotrexate</b> .....	Folinic Acid (Leucovorin)
<b>Tricyclic antidepressants</b> .....	Sodium Bicarbonate
<b>Digoxin</b> .....	Digoxin Immune Fab (Digiband)

**COMMON SIGNS AND SYMPTOMS**

- **Pulmonary tuberculosis:** low-grade afternoon fever.
- **Pneumonia:** rust-colored sputum.
- **Asthma:** wheezing on expiration.
- **Emphysema:** barrel chest.
- **Pernicious anemia:** red beefy tongue.
- **Cholera:** rice-watery stool and wrinkled hands from dehydration.
- **Malaria:** stepladder like fever with chills.
- **Typhoid:** rose spots in the abdomen.
- **Dengue:** fever, rash, and headache; positive Herman's sign.
- **Diphtheria:** pseudo membrane formation.
- **Measles:** Koplik's spots (clustered white lesions on buccal mucosa).
- **Systemic lupus erythematosus:** butterfly rash.
- **Leprosy:** leonine facies (thickened folded facial skin).
- **Appendicitis:** rebound tenderness at McBurney's point; Rovsing's sign (palpation of LLQ elicits pain in RLQ); psoas sign (pain from flexing the thigh to the hip).
- **Meningitis:** Kernig's sign (stiffness of hamstrings causing inability to straighten the leg when the hip is flexed to 90°); Brudzinski's sign (forced flexion of the neck elicits a reflex flexion of the hips).
- **Tetany:** hypocalcemia; positive Trousseau's and Chvostek sign.

- **Tetanus:** Risus sardonicus or rictus grin.
- **Pancreatitis:** Cullen's sign (ecchymosis of the umbilicus); Grey Turner's sign (bruising of the flank).
- **Pyloric stenosis:** olive like mass.
- **Patent ductus arteriosus:** washing machine-like murmur.
- **Addison's disease:** bronze-like skin pigmentation.
- **Cushing's syndrome:** moon face appearance and buffalo hump.
- **Graves' disease (hyperthyroidism):** Exophthalmos.
- **Intussusception:** sausage-shaped mass.
- **Multiple sclerosis:** Charcot's triad: nystagmus, intention tremor, and dysarthria.
- **Myasthenia gravis:** descending muscle weakness, ptosis.
- **Guillain-Barre syndrome:** ascending muscle weakness.
- **Deep vein thrombosis:** Homan's sign.
- **Angina:** crushing, stabbing pain relieved by nitroglycerin (NTG).
- **Myocardial Infarction:** crushing, stabbing pain radiating to left shoulder, neck, and arms; unrelieved by NTG.
- **Cytomegalovirus infection:** owl's eye appearance of cells (huge nucleus in cells).
- **Retinal detachment:** flashes of light, shadow with curtain across vision.
- **Basilar skull fracture:** raccoon eyes (periorbital ecchymosis) and Battle's sign (mastoid ecchymosis).
- **Buerger's disease:** intermittent claudication (pain at buttocks or legs from poor circulation resulting in impaired walking).
- **Diabetic ketoacidosis:** acetone breathe.
- **Pre-eclampsia:** proteinuria, hypertension, edema.
- **Diabetes mellitus:** polydipsia, polyphagia, polyuria.
- **Hirschsprung's Disease (Toxic Megacolon):** ribbon-like stool.
- **Herpes Simplex Type II:** painful vesicles on genitalia.
- **Genital Warts:** warts 1-2 mm in diameter.
- **Syphilis:** painless chancres.
- **Chancroid:** painful chancres.
- **Gonorrhea:** green, creamy discharges and painful urination.
- **Chlamydia:** milky discharge and painful urination.
- **Candidiasis:** white cheesy odorless vaginal discharges.
- **Trichomoniasis:** yellow, itchy, frothy, and foul-smelling vaginal discharges.
- **Pulmonary edema:** pink, frothy sputum, tachypnea, use of accessory muscles, crackles, anxiety/restlessness (Tx: furosemide).

**INSULINS**

Type	Name	Onset	Peak	Duration
<b>Rapid acting</b>	Lispro (Humalog) Aspart (NovoLog)	<15min	1h	3h
<b>Short acting (clear)</b>	Regular (Novolin R/ Humulin R)	1h	2h	4h
<b>Intermediate (cloudy)</b>	Isophane (NPH)	4h	8h	12h
<b>Long acting</b>	Glargine (Lantus)	Slow absorption	-	24h

## **MEDICATION MISCELLANEOUS**

### **HIGH ALERT MEDICATIONS**

- Insulin.
- Opiates and narcotics.
- Injectable potassium chloride (or phosphate) concentrate.
- IV coagulants (heparin).
- Sodium chloride solutions >0.9%.

### **NARROW THERAPEUTIC RANGE DRUGS**

- Gentamicin.
- Vancomycin.
- Warfarin.
- Lithium.
- Digoxin.
- Theophylline.
- Methotrexate.
- Phenytoin.
- Insulin.
- Ciclosporin.

### **TUBERCULOSIS DRUGS (RIPE):**

- R**ifampicin
- I**soniazid
- P**yrazinamide
- E**thambutol

- \***Rifampicin:** causes red-orange tears and urine.
- \***Ethambutol:** causes problems with vision (E), liver problem.
- \***Isoniazid:** can cause peripheral neuritis; take vitamin B6 to counter.

### **MONOAMINE OXIDASE INHIBITORS (MAOI's):**

- Tyramine-rich foods may cause severe hypertension in patients who take MAOI's.
- Tyramine-rich foods include: aged cheese, chicken liver, avocados, bananas, meat tenderizer, salami, bologna, Chianti wine, and beer.

### **PYRIDIDIUM:**

- Urinary tract analgesic and spasmolytic
- Not an anti-infective
- Turns urine bright orange.

**NITROGLYCERINE PATCH** is administered up to three times with intervals of five minutes.

### **MORPHINE:**

- Contraindicated in pancreatitis because it causes spasms of the Sphincter of Oddi.
- Meperidine (Demerol) should be given.

### **CLOZAPINE:**

- A significant associated toxic risk is blood dyscrasia.

### **DIGOXIN:**

- Assess pulses for a full minute, if less than 60 bpm hold dose.
- Check digitalis and potassium levels.

### **HALOPERIDOL ADVERSE EFFECTS:**

- Drowsiness.
- Insomnia.
- Weakness.
- Headache
- Extrapyramidal symptoms: akathisia, tardive dyskinesia, dystonia.

### **ALUMINUM HYDROXIDE:**

- Treatment of GERD and kidney stones.
- WOF: constipation.

### **HYDROXYZINE:**

- Treatment of anxiety and itching.
- WOF: dry mouth.

### **MIDAZOLAM:**

- Given for conscious sedation.
- WOF: respiratory depression and hypotension.

### **AMIODARONE**

- Take missed dose any time in the day or skip it entirely.
- Do not take double dose.
- WOF: diaphoresis, dyspnea, lethargy.

### **WARFARIN (COUMADIN)**

- Stress importance of complying with prescribed dosage and follow-up appointments.
- WOF: signs of bleeding, diarrhea, fever, rash.

### **METHYLPHENIDATE (RITALIN)**

- Treatment of ADHD.
- Assess for heart related side-effects and report immediately.
- Child may need a drug holiday because the drug stunts growth.

### **DOPAMINE**

- Treatment of hypotension, shock and low cardiac output.
- Monitor ECG for arrhythmias and blood pressure.

### **PHENYTOIN**

- Enteral feedings: stop the feeding 1-2h before and after the administration of the phenytoin because the enteral feedings decrease its absorption.
- Flush with 30-50ml of NaCl before and after the administration of phenytoin.

\*WOF: Watch Out For

### **Angiotensin-converting agents:**

Benazepril (Lotensin), lisinopril (Zestril), captopril (Capoten), enalapril (Vasotec), fosinopril (Monopril), moexipril (Univas), quinapril (Acupril), ramipril (Altace)

### **Beta adrenergic blockers:**

Acebutolol (Monitan, Rhotral, Sectral), atenolol (Tenormin, Apo-Atenol, Nova-Atenol), esmolol (Brevibloc), metoprolol (Alupent, Metaproterenol), propranolol (Inderal)

**Anti-infective drugs:**

Gentamicin (Garamycin, Alcomycin, Genoptic), kanamycin (Kantrex), neomycin (Mycifradin), streptomycin (Streptomycin), tobramycin (Tobrex, Nebcin), amikacin (Amikin)

**Benzodiazepine drugs:**

Clonazepam (Klonopin), diazepam (Valium), chlordiazepoxide (Librium), lorazepam (Ativan), flurazepam (Dalmane)

**Phenothiazine drugs:**

Chlorpromazine (Thorazine), prochlorperazine (Compazine), trifluoperazine (Stelazine), promethazine (Phenergan), hydroxyzine (Vistaril), fluphenazine (Prolixin)

**Glucocorticoid drugs:**

Prednisolone (Delta- Cortef, Prednisol, Prednisolone), prednisone (Apo-Prednisone, Deltasone, Meticorten, Orasone, Panasol-S), betamethasone (Celestone, Selestoject, Betnesol), dexamethasone (Decadron, Deronil, Dexon, Mymethasone, Dalalone), cortisone (Cortone), hydrocortisone (Cortef, Hydrocortone Phosphate, Cortifoam), methylprednisolone (Solu-cortef, Depo-Medrol, Depopred, Medrol, Rep-Pred), triamcinolone (Amcort, Aristocort, Atolone, Kenalog, Triamolone)

**Antivirals:**

Acyclovir (Zovirax), ritonavir (Norvir), saquinavir (Invirase, Fortovase), indinavir (Crixivan), abacavir (Ziagen), cidofovir (Vistide), ganciclovir (Cytovene, Vitrasert)

**Cholesterol-lowering drugs:**

Atorvastatin (Lipitor), fluvastatin (Lescol), lovastatin (Mevacor), pravastatin (Pravachol), simvastatin (Zocar), rosuvastatin (Crestor)

**Angiotensin receptor blocker drugs: ARB**

Valsartan (Diovan), candesartan (Altacand), losartan (Cozaar), telmisartan (Micardis)

**Histamine 2 antagonist drugs:**

Cimetidine (Tagamet), famotidine (Pepcid), nizatidine (Axid), ranitidine (Zantac)

**Proton pump inhibitors:**

Esomeprazole (Nexium), lansoprazole (Prevacid), pantoprazole (Protonix), rabeprazole (AciPhex)

**Anticoagulant drugs:**

Heparin sodium (Hepalean), enoxaparin sodium (Lovenox), dalteparin sodium (Fragmin)

**Medication classifications commonly used in a medical/surgical setting**

Antacids—Reduce hydrochloric acid in the stomach  
 Antianemics—Increase red blood cell production  
 Anticholinergics—Decrease oral secretions  
 Anticoagulants—Prevent clot formation  
 Anticonvulsants—Used for management of seizures/bipolar disorder  
 Antidiarrheals—Decrease gastric motility and reduce water in bowel  
 Antihistamines—Block the release of histamine  
 Antihypertensives—Lower blood pressure and increase blood flow  
 Anti-infectives—Used for the treatment of infections  
 Bronchodilators—Dilate large air passages in asthma/lung disease  
 Diuretics—Decrease water/sodium from the Loop of Henle  
 Laxatives—Promote the passage of stool  
 Miotics—Constrict the pupils  
 Mydriatics—Dilate the pupils  
 Narcotics/analgesics—Relieve moderate to severe pain

**Drug schedules**

**Schedule I**—Research use only (example LSD)  
**Schedule II**—Requires a written prescription (example Ritalin)  
**Schedule III**—Requires a new prescription after six months or five refills (example codeine)  
**Schedule IV**—Requires a new prescription after six months (example Darvon)  
**Schedule V**—Dispensed as any other prescription or without prescription if state law allows (example antitussives)

**MORE CULTURAL CONSIDERATIONS****Arab American cultural attributes:**

Females avoid eye contact with males; touch is accepted if done by same-sex healthcare providers; most decisions are made by males; Muslims (Sunni), refuse organ donation; most Arabs do not eat pork; they avoid icy drinks when sick or hot/cold drinks together; colostrum is considered harmful to the newborn

**Asian American cultural attributes:**

They avoid direct eye contact; feet are considered dirty (the feet should be touched last during assessment); males make most of the decisions; they usually refuse organ donation; they generally do not prefer cold drinks, believe in the “hot-cold” theory of illness

**Native American cultural attributes**

They sustain eye contact; blood and organ donation is generally refused; they might refuse circumcision; may prefer care from the tribal shaman rather than using western medicine

**Mexican American cultural attributes**

They might avoid direct eye contact with authorities; they might refuse organ donation; most are very emotional during bereavement; believe in the “hot-cold” theory of illness

**GENERAL TIP INFORMATION – USE RACE**

1. **Read the question and all answers carefully**— Don't jump to conclusions or make wild guesses.
2. **Look for keywords**— Avoid answers that include *always, never, all, every, only, must, no, except, or none*.