This is the DRAFT some things might be added
INDEX PAGE TBD AFTER WE REVIEW
Burn list here but to be added to Brightspace like we said.
I plan on doing videos on the complete burn list and med list
Med list is the Cards they need to complete as they are in simulations and the cross walk
Med Card Changed more applicable to fundamentals
SIMS have a STAMPS area(Minerva) to make sure they complete med cards and simulation
All assessments have stamps as well
All units have concepts and skills labs taken from the crosswalk
Each Lab ill make videos PPT covering the skills and Nursing 7 for continuity
I added Content Sheets ie CHF COPD etc and will continue to make study sheets as this is how we should approach Nursing 2
I think this book works enough for nursing 1
This will be a full size book that they can stamp etc.
I didn't include the validations since some have changed so if you could share those I'd appreciate it.

BOOT KAMP is in development I added a lot of devices image and think having these available are priority for this

ANYTHING I MISSED OR YOU WANT TO ADD let me know!!!

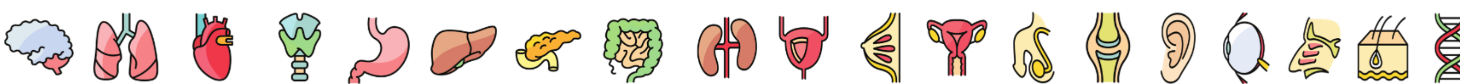
BURN LIST OF TERMS FOR 101 - 204 TERMS					
First quarter Week 4 30% Midterm Week 6 60% Week 10 75% Week 15 90%					
WHEEZES	PERTUSSIS	DYSPNEA	AIRBORNE	BRADYPNEA	NA
BRACHIAL	AORTIC	CONTACT	TEMPORAL	S1	ASTHMA
GLUCOSE	BRONCHIAL	HGB	SOB	APICAL	MEASLES
CHF	DOFFING	POST TIBIAL	CRANIAL NERVES	HYPEREXIA	EDEMA
ACS	CLUBBING	C-DIFF	CL	HDL	K
S4	CVA	NGT	CRP	TACHYCARDIA	SYSTOLIC
BVM	NG	TRACHEAL	NI	CRACKLES	GRV
CHEYNE STOKES	CAP REFILL	MUMPS	HTN	TB	FEMORAL
HEMOPTYSIS	RHONCH	MITRAL	PLT	CHEST TUBE	NPO
HYPERTROPHY	FEVER	S3	NRB	VESICULAR	DESATURATION
CLEAR LIQUID	KIDNEY DIET	STANDARD	DROPLET	FLANG	PH-STOMACH
CAD	BUN	PEDAL	PEG	HCT	PULMONIC
ND	LDL	ILEOSTOMY	HOB	G-TUBE	BELL
INCENTIVE SPRIOMETRY	TRANSVERSE COLOSTOMY	SIGMOID COLOSTOMY	FLATTENED DIAPHRAGM	DESCENDING COLOSTOMY	ASCENDING COLOSTOMY
DIAPHRAM	SEMI-FOWLERS	RUQ	TRACH	DASH DIET	TROPONIN
HYPOTHERMIA	5TH ICS-MCL	MRSA	ASPIRATION	VARICELLA	SOMNOLENT
BRUIT	NA RESTRICTED	SPECIFIC GRAVITY	TACHYPNEA	WBC	BRADYCARDIA
POC	DIASTOLIC	COLOSTOMY	ORTHOPNEA	S2	AUSCULTATION
STOMA	RUBEOLA	EMPHYSEMA	BORGOBORGMY	FOLEY	NC
CAROTID	CO2	HEMIANOPSIA	YANKAUER	RADIAL	LLQ
HYPERGLYCEMIA	CLEAN CATCH	APNEUSTIC	HGA1C	BS	PALPATION
INFLUENZA	95-100%	UA	J-TUBE	TRYGLYCERIDES	HYPOGLYCEMIA
RLQ	ML	DONNING	VRE	RALES	BRADEN SCALE
DIABETES 1	WALKER	STRIDOR	POPLITEAL	CAUTI	TRICUSPID
BLADDER SCAN	FBS	BEFAST	STERILE	AKINESIA	3-POINT
SUPINE	CR	HYPOTENSION	NITRATES	DIABETES 2	GERD
KUSSMAUL	PH	HEMIPLEGIA	COMATOSE	BROCAS	CANE
LATERAL POSITION	CRUTCHES	EXPRESSIVE APHASIA	4 – POINT	PRONE	CKD
02	ASEPTIC	ORTHOPNEIC	GCS	LITHOTOMY	PERRLA
CUP	LOC	SIDE LYING SIMS	STAGE 5	PARKINSONS	ISCHEMIC
WERNICKE’S	MMSE	MEDICAL ASEPSIS	CVA	OBTUNDED	OUNCE
STUPUROUS	NJ	RECEPTIVE APHASIA	LUQ	AVPU	MS
SWING THROUGH	HIGH FOWLERS	KETONES	MINI-COG	GAIT BELT	WHEELCHAIR
24 HOUR URINE	2 POINT GAIT	CARDIOMYOPATHY	ALS	TRENDELENBURG	GFR

MEDS TO KNOW N1-N2 SIM MED CARD ASSIGNMENT

These are the medications that are included within the required simulations for 101. Each medication should be made into a medication card and hand written.

Medication	Drug Class	Primary Use	Most Likely Diagnosis
Hydromorphone HCl	Opioid analgesic	Severe pain	Post-op orthopedic pain
Hydrocodone/Acetaminophen	Opioid + analgesic	Moderate pain	Post-op pain
Cefazolin sodium	1st-gen cephalosporin antibiotic	Surgical prophylaxis, skin infections	Pre-op antibiotic
Naloxone	Opioid antagonist	Opioid overdose	Opioid-induced respiratory depression
Metoprolol succinate	Beta-blocker	HTN, HF, rate control	HTN, stable HF
Atorvastatin	Statin	Hyperlipidemia	CAD, Cardiac Risk
Donepezil	Acetylcholinesterase inhibitor	Dementia	Alzheimer's disease
Cyanocobalamin	Vitamin B12	B12 deficiency	Pernicious anemia
Pyridoxine	Vitamin B6	Deficiency, neuropathy	Chronic alcohol use, INH therapy
Vitamin E	Fat-soluble vitamin	Deficiency, antioxidant	Neuropathy / general supplementation
Folic acid	Vitamin B9	Deficiency, anemia, pregnancy	Macrocytic anemia
Ibuprofen	NSAID	Pain, fever, inflammation	Musculoskeletal pain
Hydrochlorothiazide	Thiazide diuretic	HTN, mild edema	Hypertension
Amlodipine	Calcium channel blocker	Hypertension, angina	HTN
Regular Insulin	Short-acting insulin	Hyperglycemia, DKA	Type 1 or 2 diabetes
Dextrose 50%	Hypertonic glucose	Hypoglycemia	Hypoglycemic event
Glucose tablet	Oral glucose	Mild hypoglycemia	Diabetes with low BS
Glucagon	Hyperglycemic hormone	Severe hypoglycemia	Hypoglycemic unresponsive patient
Nitroglycerin (SL)	Nitrate vasodilator	Angina	Acute chest pain
Furosemide	Loop diuretic	Fluid overload	CHF exacerbation
Glipizide	Sulfonylurea	Type 2 diabetes	Type 2 Diabetes
Losartan	ARB (angiotensin receptor blocker)	Hypertension, diabetic, HF	HTN, Heart Failure
Simvastatin	Statin (lipid-lowering)	Hyperlipidemia	CAD, Atherosclerosis prevention
0.9% NS Flush	Isotonic crystalloid	Maintain IV patency	Any inpatient admission
Docusate Sodium	Stool softener	Constipation	Post-op bowel immobility
Albuterol inhaler	Short-acting β2 agonist	Bronchospasm, asthma, COPD	Asthma or COPD exacerbation
Insulin Glargine	Long-acting insulin	Basal glucose control	Type 1 or Type 2 Diabetes
0.9% NS Infusion	Isotonic crystalloid	Hydration, hypovolemia	Dehydration, shock
Influenza Vaccine	Immunization	Infection prevention	Community health / Pre-op
Enoxaparin	Low-molecular-weight heparin	DVT/PE prophylaxis	Post-op immobility, orthopedic surgery
Tuberculin PPD	Diagnostic agent	TB screening	Occupational testing
0.45% Sodium Chloride	Hypotonic crystalloid	Hypernatremia, dehydration	Hypernatremia
Budesonide (inhaled)	Inhaled corticosteroid	Airway inflammation	Asthma, COPD
Morphine sulfate	Opioid analgesic	Moderate–severe pain	Acute post-op pain
Acetaminophen	Antipyretic / analgesic	Mild pain, fever	Viral illness, post-op discomfort
Lisinopril	ACE inhibitor	HTN, HF, post-MI	Hypertension, LV dysfunction
Celecoxib	COX-2 NSAID	Pain, arthritis	Osteoarthritis
Senna	Stimulant laxative	Constipation	Opioid-related constipation
Metoclopramide	Prokinetic antiemetic	Nausea, gastroparesis	Post-op nausea, diabetic gastroparesis
Zolpidem	Sedative hypnotic	Insomnia	Sleep disturbance in hospitalized pt

NAME



CLASS - ROUTE

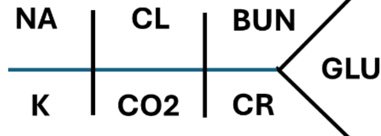
Circle what organ it is related to

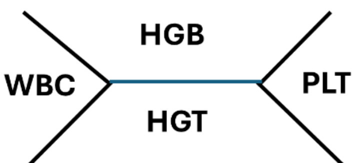
Action

Indication/Diagnosis

Circle lab or assessment to monitor other LABS

Side Effects/Adverse REACTIONS





TOP 3 MONITORING OR THINGS YOU SHOULD KNOW

SIMULATION REQUIREMENT 101

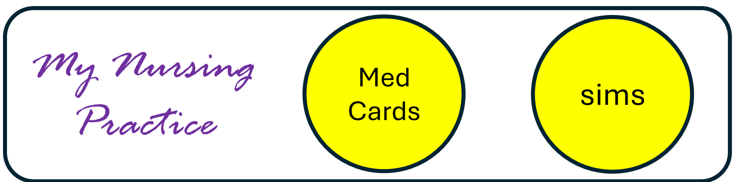
Nursing I—Boot SIM I – Medications- CARDS REQUIRED

Losartan	Simvastatin	0.9 NS Flush

ORIENTATION TO SIMULATION

This first sim is the chance to get acclimated within the environment theses are the task requirements. This is an immersive experience, and the sim should last less than 30 Minute

Tutorial Steps	
Welcome!	Measure oxygen saturation
Review EHR	Remove gown
Perform hand hygiene	Apply 5 lead ECG
Review supplies on top of cart	Auscultate anterior: heart, carotid, lung, and bowel sounds
Raise and lower side rails	Re-position patient: sitting
Operate bed controls	Auscultate posterior: lung sounds
Identify patient	Re-position patient: semi Fowler's
Select hand gestures	Palpate abdomen
Palpate radial pulse	Assess capillary refill
Count respirations	Replace gown
Select cart tabs	Assess edema
Pick up equipment and supplies	Assess skin temperature
Interact with equipment/ supplies	Assess ankle clonus
Measure temperature	Assess pupils
Teleport: Room navigation	Locate phone
Place call light within reach	Review seizure pad placement
Review monitor features	Practice additional skills as desired
Measure blood pressure	End simulation



SIMULATION REQUIREMENT 101

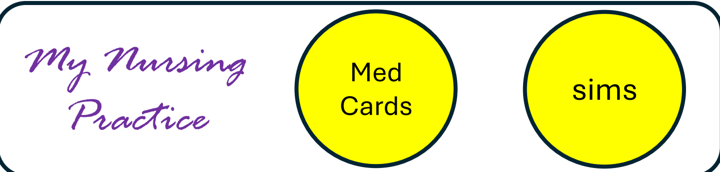
Nursing I—Boot Sim II Medications MED CARDS REQUIRED

0.9 NS Flush	Docusate Sodium	Albuterol Inhaler	Insulin Glargine	0.9 NS InF

ORIENTATION TO SIMULATION SKILLS

This Second sim is the chance to get acclimated within the environment theses are the task requirements should last less than 30 Minute

Tutorial Steps	
Welcome!	Locate collection port on urinary catheter tubing
Tip: Selecting cart tabs	Collect urine sample from indwelling urinary catheter
Tip: Interacting with equipment	Obtain sputum sample
Perform hand hygiene & don gloves	Locate suction regulator & turn on: setting 'medium regular'
Clean site for IV insertion	Suction nares with suction catheter
Insert IV catheter	Assess secretions
Remove IV catheter	Reposition patient: Fowler's, 60 degrees
Apply bandage to IV site	Insert nasogastric (NG) tube
Clean site for venipuncture	Assess placement of NG tube & gastric contents
Perform venipuncture	Locate NG suction regulator & turn on: setting 'low intermittent'
Apply gauze dressing to venipuncture site	Attach NG tube to suction
Send blood sample to lab	Assess stomach contents
Review results in EHR	Apply nasal cannula
Blood glucose assessment: clean finger & perform puncture	Administer oxygen
Blood glucose assessment: clear first drop of blood & obtain BG	Reposition patient: supine, 0 degrees
Apply bandage to finger	Perform head tilt/chin lift maneuver
Implement the incentive spirometer	Practice additional skills as desired
Insert indwelling urinary catheter	End simulation
Assess urine in drainage bag	



SIMULATION REQUIREMENT 101

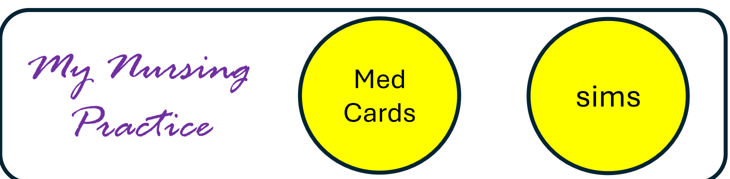
Nursing I—Boot Sim III Medications 3 Sims

0.9 NS Flush	Docusate Sodium	Influenza Vaccine	Enoxaparin	Tuberculin PPD
0.45 sodium chloride inf.	Morphine Sulfate	Acetaminophen	Albuterol Inhaler	Budenoside

ORIENTATION TO MED ADMINISTRATION

This sim is the chance to get acclimated within the environment theses are the task requirements should last less than 30 Minute

Tutorial Steps	
Tip: Interacting with equipment	Gather, verify, administer, & document: enoxaparin, subcutaneous route
Perform hand hygiene & don gloves	Gather, verify, administer, & document: tuberculin PPD, intradermal route
Review medication drawer	Clean IV hub
Review EHR	Verify patency: flush IV
Review MAR	Gather, verify, administer & document: morphine sulfate, IV push
Identify patient: name & date of birth	Gather & verify: 0.45% sodium chloride, IV infusion
Gather: docusate sodium	Hang infusion bag on IV pole
Verify: docusate sodium	Connect infusion to patient
Administer: docusate sodium	Program, start infusion, & document: 0.45% sodium chloride
Document administration: docusate sodium	Gather & verify: budesonide, inhalation
Clean site for intramuscular injection	Administer & document: budesonide, inhalation
Gather & verify: influenza virus vaccine	Practice additional skills as desired
Administer & document: influenza virus vaccine, intramuscular route	End simulation



SIMULATION REQUIREMENT 101

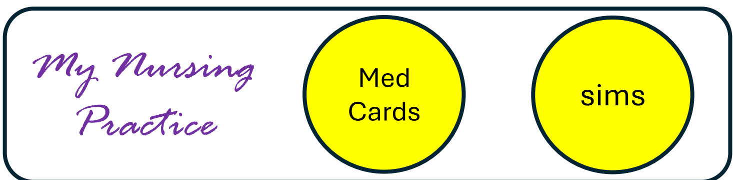
Nursing I—Boot Sim III Medications 3 Sims

0.9 NS Flush

ORIENTATION TO PPE

This sim is the chance to get acclimated within the environment theses are the task requirements should last less than 30 Minute

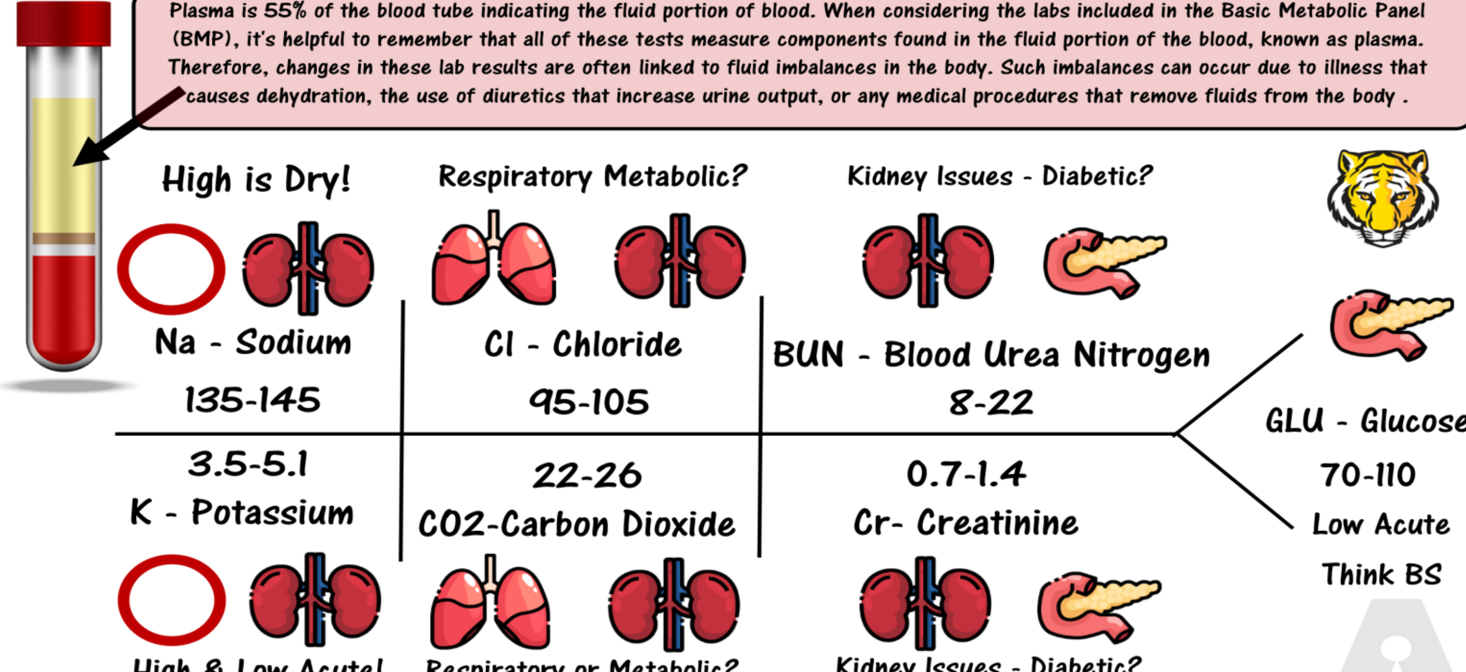
Tutorial Steps	
Review precaution sign	Tip: Doffing and discarding PPE
Review EHR for precaution information	Doff gown
Perform hand hygiene	Doff gloves
Tip: Donning PPE	Doff face shield
Don gown	Doff N95 mask
Don N95 mask	Perform hand hygiene
Don face shield	Practice additional skills as desired
Don gloves	End simulation
Teleport: Enter patient room	
Teleport: Exit patient room	
Alternate method: Enter patient room	



NURSINGKAMP BMP Basic Metabolic Panel Chem7 Chemistry 7 Level 1

The Basic Metabolic Panel (BMP) is a set of lab tests used to evaluate a patient's electrolyte balance and kidney function. These tests are typically performed daily for inpatients, during acute situations, or before diagnostic procedures or surgeries. It's important to note that lab values can vary between institutions, so always refer to your agency's policy for interpreting results. The NCLEX exam will provide reference ranges for these labs, but it's crucial for nurses to understand the underlying causes of any abnormalities, as well as the appropriate assessments and interventions. Units of measurement (such as mEq/L, mmol/L, etc.) are not emphasized here because the focus is on understanding the reference ranges.

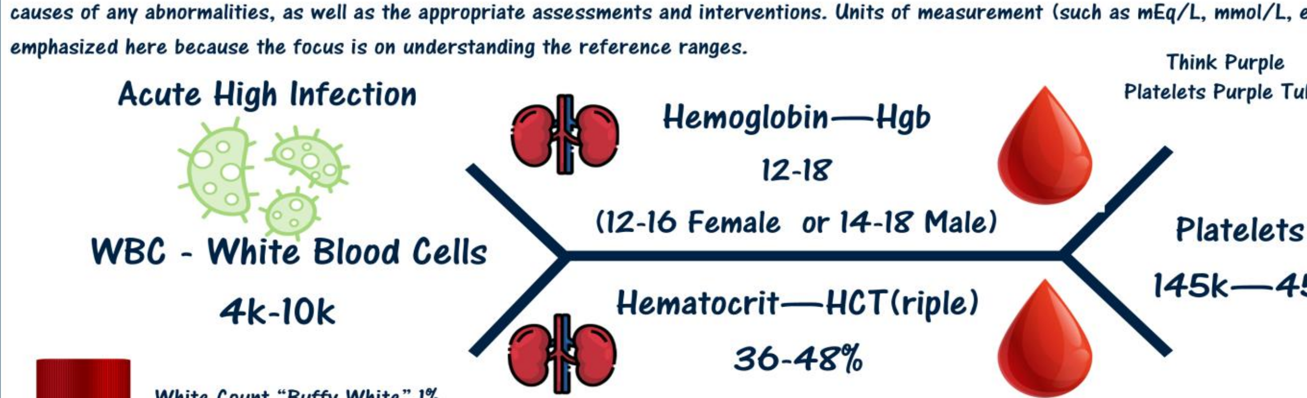
Plasma is 55% of the blood tube indicating the fluid portion of blood. When considering the labs included in the Basic Metabolic Panel (BMP), it's helpful to remember that all of these tests measure components found in the fluid portion of the blood, known as plasma. Therefore, changes in these lab results are often linked to fluid imbalances in the body. Such imbalances can occur due to illness that causes dehydration, the use of diuretics that increase urine output, or any medical procedures that remove fluids from the body .



NURSINGKAMP CBC Complete Blood Count Level 1

A Complete Blood Count (CBC) is a common blood test that measures several components of blood that is used to assess overall health and detect a variety of conditions, such as anemia, infection, and other blood disorders. These tests are typically performed daily for inpatients, during acute situations, or before diagnostic procedures or surgeries. It's important to note that lab values can vary between institutions, so always refer to your agency's policy for interpreting results. The NCLEX exam will provide reference ranges for these labs, but it's crucial for nurses to understand the underlying causes of any abnormalities, as well as the appropriate assessments and interventions. Units of measurement (such as mEq/L, mmol/L, etc.) are not emphasized here because the focus is on understanding the reference ranges.

Think Purple
Platelets Purple Tube



White Count "Buffy White" 1%

Notice it is a small part of the blood < 1% which makes sense since an elevated WBC is often an indicators of infection

The "formed elements" of blood, which make up about 45% of its volume, refer to the cellular components of blood

1. **White Blood Cells (WBCs):** Part of the immune system, they help fight infections.
2. **Hemoglobin:** The protein in red blood cells that carries oxygen.
3. **Hematocrit:** The proportion of blood that consists of red blood cells.
4. **Red Blood Cells (RBCs):** Carry oxygen from the lungs to the rest of the body.
5. **Platelets:** Help with blood clotting to stop bleeding.

Unit 1

Concepts Covered	Clinical Skills In the Lab
Nursing Process: Assessment vs. Implementation Data Collection: Subjective vs. Objective Acute vs. Chronic Illness Cardiovascular Disorders (CAD, HTN, CHF) Respiratory Disorders (COPD) Endocrine Disorders (Diabetes Mellitus) Renal Disorders (CKD) Gastrointestinal Disorders (GERD) Neurological Disorders (CVA)	Professional uniform BLS overview ADLs Practice with handling patients Handwashing validation PPE Validation VS Headset: orientation to simulation room

MEDICATIONS TO KNOW- MED CARD ASSIGNMENT

Medication	System	Drug Class	Primary Use	Most Likely Diagnosis / Indication
0.9% NS Flush	Fluid & Electrolyte	Isotonic Crystalloid (IV Fluid)	IV line flushing, medication dilution	IV patency maintenance, hydration
0.9% NS Infusion	Fluid & Electrolyte	Isotonic Crystalloid (IV Fluid)	Fluid replacement, hydration	Dehydration, hypovolemia, maintenance fluids
0.45% Sodium Chloride	Fluid & Electrolyte	Hypotonic Crystalloid (IV Fluid)	Fluid replacement (hypotonic)	Hypernatremia, maintenance fluids, diabetic ketoacidosis
Influenza Vaccine	Immune System	Inactivated Vaccine	Prevention of influenza infection	Seasonal influenza prophylaxis
Tuberculin PPD	Immune System	Diagnostic Agent	Tuberculosis screening (skin test)	Tuberculosis exposure / latent TB screening
Cyanocobalamin	Hematologic / Nervous	Vitamin B12	Vitamin B12 supplementation	Vitamin B12 deficiency, Pernicious anemia
Pyridoxine	Neurologic / Hematologic	Vitamin B6	Vitamin B6 supplementation	Vitamin B6 deficiency, peripheral neuropathy, sideroblastic anemia
Vitamin E	Multiple (Antioxidant)	Fat-soluble Vitamin	Antioxidant, vitamin supplementation	Vitamin E deficiency, antioxidant support
Folic Acid	Hematologic	Vitamin B9 (Folate)	Folate supplementation	Folic acid deficiency, Megaloblastic anemia, Pregnancy (neural tube defect prevention)

CONCEPT MAPS TO KNOW

CARDIAC	CAD	HTN	CHF
RESPIRATORY	COPD	EMPHYSEMA	ASTHMA
ENDOCRINE	Diabetes Type I	Diabetes Type 2	
RENAL	Chronic Kidney Disease		
GASTROINTESTINAL	GERD (Gastroesophageal Reflux Disease)		
NEUROLOGICAL	CVA (Cerebral Vascular Accident)		

Unit 1 ACUTE VS CHRONIC

ACUTE: Definition: A sudden, short-term, and often rapidly changing condition that represents a new problem or deviation from the patient's previous baseline. Acute issues typically require immediate assessment, timely intervention, and close monitoring because they can worsen quickly.

Key Features:
Onset: Rapid, hours to days
Course: Unpredictable, may deteriorate fast
Priority: High—frequently triggers STAT assessment or escalation
Assessment Goal: Identify what changed, when it changed, how severe the change is

Examples: Acute pain spike, new onset confusion, shortness of breath, hypotension, bleeding, fever, new abnormal lab value

Acute findings are always assessed first during the "Assessment & Prioritization" step because they directly impact immediate safety.

CHRONIC: Definition A long-standing, persistent, or recurring condition that has been present for weeks, months, or years, with symptoms that are generally stable, predictable, or part of the patient's baseline health status.

Key Features:
Onset: Slow, develops over time **Course**: Stable or gradually progressive
Priority: Lower than acute issues unless the chronic condition becomes unstable or exacerbated

Assessment Goal: Determine baseline, trend, and whether there is any acute change on top of chronic illness
Examples: COPD baseline dyspnea, chronic back pain, diabetes, heart failure, dementia baseline behaviors
Chronic findings help determine what is normal for the patient so the nurse can detect acute deviations from baseline.
The Core Rule

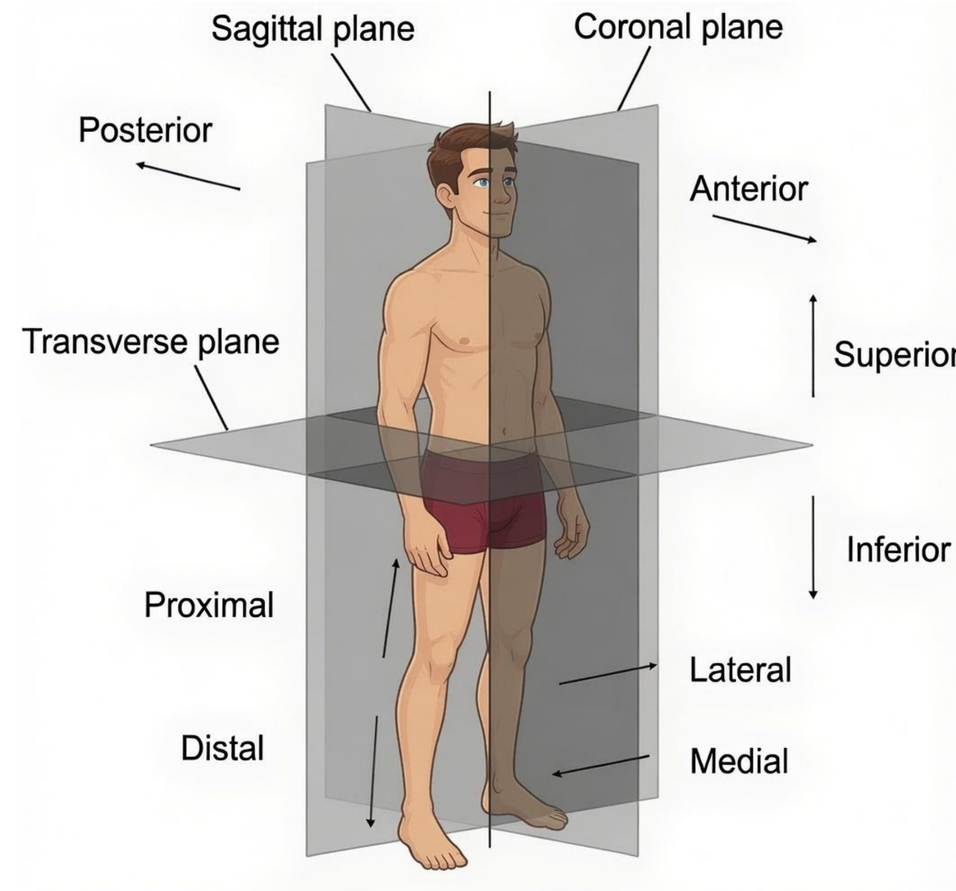
Acute = New problem → unstable → requires immediate nursing action
Chronic = Existing condition → stable baseline → requires long-term management

ASSESSMENT = ACUTE OR CHRONIC

Category	Acute	Chronic
Onset	Sudden or recent	Slow or progressive
Pain	Sharp, severe, new	Dull, persistent, managed
Vital Signs	Unstable (e.g., ↑HR, ↓BP, ↑RR, fever)	Often within baseline or compensated
Oxygenation	Sudden desaturation, dyspnea at rest	Dyspnea on exertion, baseline SpO_2 managed w/home oxygen
Neuro Status	New confusion, change in LOC, slurred speech	Stable cognitive changes (e.g., dementia baseline)
Skin	Warm, flushed, cyanosis, acute rash, diaphoresis	Chronic ulcers, scarred tissue
Labs	Rapid changes (H&H drop, troponin rise, sudden hyperkalemia)	Mild to moderate ongoing abnormalities (anemia of CKD)
Pain Meds Needed	Immediate, high doses for control	Controlled with routine analgesics
Functional Status	New weakness, falls, inability to perform ADLs	Gradual decline; uses assistive devices
Red Flags	New symptoms, unstable vitals, altered mental status	Longstanding, documented history

Unit 1 Good to know on Unit Meds

Medication	Top 3 Things You Should Know
0.9% NS Flush / Infusion	1. Generally very safe, but large volumes can cause fluid overload. 2. Watch for swelling, shortness of breath, or high blood pressure (fluid overload). 3. Can cause electrolyte imbalances if used excessively.
0.45% Sodium Chloride	1. Hypotonic – can lower sodium levels too quickly. 2. Major risk: **Hyponatremia** (low sodium) → confusion, seizures. 3. Use with caution in patients with heart failure or brain conditions.
Influenza Vaccine	1. Common side effects: soreness at injection site, mild fever, tiredness (1–2 days). 2. Rare but serious: severe allergic reaction (anaphylaxis). 3. Safe for most people; cannot cause the flu (it's inactivated).
Tuberculin PPD	1. Main side effect: local skin reaction (redness, swelling) at test site. 2. False positives possible in people previously vaccinated with BCG. 3. Not a vaccine – it's only a diagnostic skin test.
Cyanocobalamin (B12)	1. Very safe; side effects are rare. 2. Can cause mild diarrhea, itching, or rash. 3. Important: Must be monitored in patients with low potassium levels.
Pyridoxine (B6)	**1. High doses/long-term use can cause nerve damage** (sensory neuropathy). 2. Usually well tolerated at normal doses. 3. Can interfere with levodopa (Parkinson's medication).
Vitamin E	1. High doses increase risk of **bleeding** (blood thinning effect). 2. May raise risk of prostate cancer and heart failure with very high doses. 3. Generally safe at recommended doses.
Folic Acid	1. Very safe for most people. 2. Can mask Vitamin B12 deficiency if taken alone. 3. High doses may cause nausea, bloating, or sleep disturbances.



Unit 1 Safety & Devices to Know

Device	What It Is	Why It's Used	Top 3 Things You Should Know
Transdermal Patch	Medicated adhesive patch applied to skin	Delivers medication slowly over time	1. Rotate sites to prevent skin irritation. 2. Do **not** cut patches unless approved. **Do not remove** 3. Remove old patch before applying new one.
Sequential Compression Devices (SCDs)	Inflatable sleeves on legs that squeeze intermittently	Prevent blood clots (DVT)	1. Must be on **except** during ambulation. 2. Check skin every shift for breakdown. 3. Ensure proper fit – too loose = ineffective.
Wound Vac	Vacuum-assisted device with foam dressing	Promotes wound healing in complex wounds	1. Assess for proper seal and pressure settings. 2. Monitor output (drainage) and document. 3. Never turn off without provider order.
Chest Tube	Tube inserted into pleural space	Remove air or fluid from chest (pneumothorax, hemothorax)	1. Keep system **below chest level** at all times. 2. Check for tidaling and bubbling. 3. Never clamp without order
IV Fluids	Fluids infused through a vein	Hydration, medication delivery, electrolyte balance	1. Know fluid type (NS, LR, D5W, etc.) and rate. 2. Monitor for fluid overload (especially in heart failure). 3. Assess IV site every shift for infiltration.
Tracheostomy	Surgical opening in trachea with tube	Maintains airway in patients who can't breathe normally	1. Always have spare trach and obturator at bedside. 2. Keep inner cannula clean. Assess lung sounds 3. Suction as needed using sterile technique.
Foley Catheter	Indwelling urinary catheter	Accurate urine output, urinary retention	1. Use **aseptic** insertion technique. 2. Secure catheter to prevent pulling. 3. Monitor for CAUTI (Catheter-Associated UTI) – remove ASAP.
Central Line	Catheter in large vein (PICC, IJ, Subclavian)	Long-term IV access, TPN, chemo, critical meds	1. Strict **central line dressing changes** (sterile). 2. Monitor for infection (redness, fever). 3. Use **Scrub the Hub** before every access.
Hemodialysis Catheter	Large-bore central line (usually tunneled)	Provides access for dialysis	**1. Do NOT use** for routine IV meds unless ordered. 2. High infection risk – protect at all costs. 3. Check blood return and patency before use.
Fistula	Surgically created connection between artery and vein	Permanent access for hemodialysis	**1. Assess thrill and bruit** every shift. **2. Never** take BP or draw blood on fistula arm. 3. Protect from injury – no tight clothing or IVs.
Dressings	Various wound coverings	Protect wound, absorb drainage, promote healing	1. Know when to change (wet-to-dry, dry-to-dry, etc.) 2. Document wound appearance and drainage. 3. Maintain sterile technique for new dressings.
Colostomy	Surgical opening from colon to abdomen	Diverts stool when normal bowel route is not possible	1. Monitor stoma color (should be pink/red & moist). 2. Empty pouch when ⅓–½ full. 3. Identify location of stoma and type of ostomy
NG Tube	Tube from nose to stomach	Decompression, feeding, medication administration	1. Verify placement **before every use** (X-ray or pH test). 2. Check residuals if on feeding. 3. Secure properly to prevent dislodgement.
Enteric Tube (e.g., PEG, NJ Tube)	Feeding tube into stomach or small intestine	Long-term nutrition when oral intake is not possible	1. Confirm placement before feeding. 2. Keep head of bed elevated ≥30° during feeds. 3. Monitor for aspiration risk.

Unit 2 VITAL SIGNS

Concepts Covered

Vital Signs - Temperature Heart Rate Blood Pressure
Respiratory Rate
Oxygen Saturation
Pain Assessment
Normal vs. Abnormal Findings
Infection and Fever
Oxygenation and Perfusion
Hypertension
Assessment Techniques
Use of Assessment Equipment
Personal Protective Equipment (PPE)
Scope of Practice

Skills In the Lab

PPE Donning and Doffing
Hand Hygiene
Temperature Assessment
Apical Pulse Assessment
Radial Pulse Assessment
Manual Blood Pressure Measurement
Respiratory Rate Assessment
Oxygen Saturation Assessment
Pain Assessment
Proper Use of Stethoscope
Proper Use of Vital Sign Equipment
Identification of Normal and Abnormal Values
Vital Signs Case Study Application
Scope of Practice

MEDICATIONS TO KNOW- MED CARD ASSIGNMENT

Medication	System	Drug Class	Primary Use	Likely Diagnosis / Indication
Acetaminophen	Nervous System Pain	Non-Opioid Analgesic / Antipyretic	Pain relief and fever reduction	Mild to moderate pain, Fever, Headache
Ibuprofen	Musculoskeletal Inflammatory	NSAID (Non-Steroidal Anti-Inflammatory Drug)	Pain, inflammation, fever	Arthritis, Muscle pain, Menstrual cramps, Fever
Amlodipine	Cardiovascular	Calcium Channel Blocker	Lower blood pressure, treat angina	Hypertension, Coronary Artery Disease
Hydrochlorothiazide (HCTZ)	Cardiovascular / Renal	Thiazide Diuretic	Reduce blood pressure, decrease fluid	Hypertension, Edema (fluid retention), Heart Failure

Good to Know on Unit Medications

Medication	Top 3 Important Things to Know
Acetaminophen	**1. Maximum daily dose is 4,000 mg** (3,000 mg for elderly/chronic liver disease). 2. Major risk: **Liver toxicity** (especially with alcohol). 3. Does **not** reduce inflammation (unlike NSAIDs).
Ibuprofen	1. Take with food to protect stomach. 2. Risks: **GI bleeding**, kidney damage, increased blood pressure. 3. Avoid in patients with heart failure, ulcers, or kidney disease.
Amlodipine	1. Common side effect: **Peripheral edema** (swelling in ankles/feet). 2. Can cause dizziness or flushing. 3. Monitor blood pressure regularly; do not stop suddenly.
Hydrochlorothiazide	1. Major risk: **Electrolyte imbalance** (especially low potassium). 2. Increases urination – give in the morning. 3. Monitor for dehydration, dizziness, and gout flares.

Unit 2 VITAL SIGNS-TEMPERATURE

Temperature Classification	
HYPOTHERMIA	<36.0 C (95.0F)
NORMAL	36.0 c - 37.5 c (97.7 F—99.5 F)
FEVER	>38.0—39.0c (100.4-102.2 F)
HYPERTHERMIA	39.0 c - 39.9c (102.2 F—103.9 F)
HYPEREXIA	40.0 c - 41.5 c (104.0 F—106.7 F)

Temperature Ranges Variations		
Oral	36.4- 37.2 ° C	97.6-99.6 ° F
Tympanic	35.9- 37.6 ° C	96.6-99.7 ° F
Axillary	35.2- 36.9 ° C	95.3-98.4 ° F
Rectal	37.0- 38.1 ° C	98.6-100.6 ° F
Forehead	35.8- 36.9 ° C	96.5-99.6 ° F

Thermoregulation is managed by the Hypothalamus which resides in the brain. This manages temperature changes in the body the hypothalamus has a trigger "set point" that turns on and off in relation to changes of temperature in the blood or sensory receptors of the skin. Once turned on the compensatory mechanisms of the autonomic system become active in the management of temperature as eat is loss and gained through the skin with vasodilation, vasoconstriction sweating and muscle contraction (shivering)

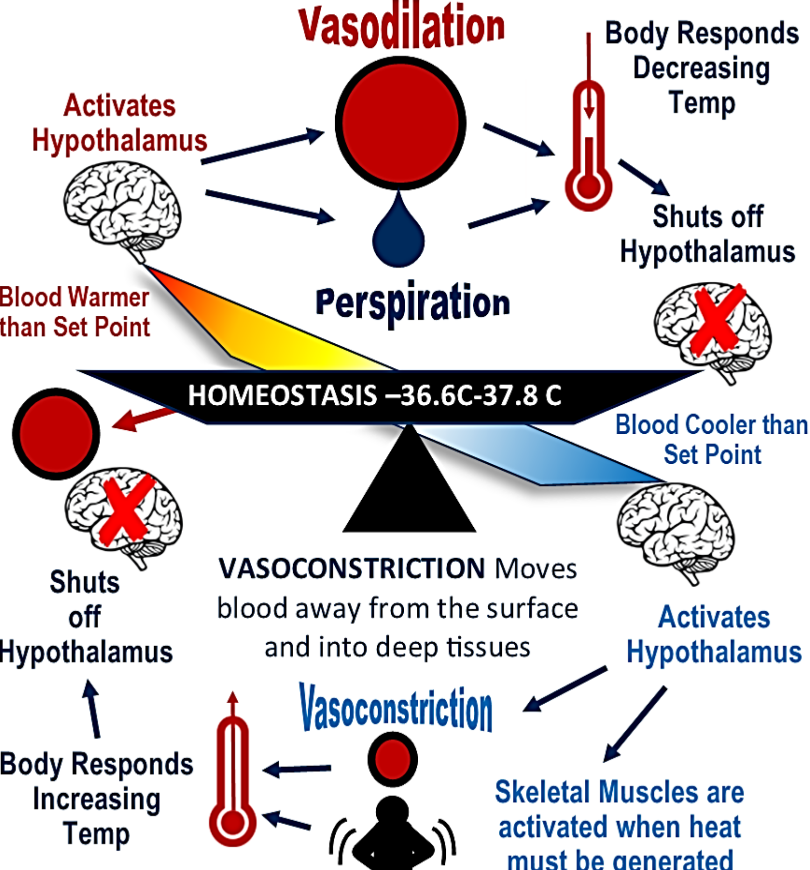
°f	°c	Variations in Assessments
104	**40**	Fainting, dehydration, weakness, vomiting h/a, sweating starts to be life threatening
102	**39**	Severe sweating, flushed, red, tachycardia
100	**38**	Feeling hot, sweating, thirsty
98.6	37	NORMAL
97	36	Feeling Cold shivering
95	35	Intense shivering, numbness blue/gray skin dysrhythmias
93	34	Severe Shivering, Loss of finger movement, blueness confusion

Meds that Increase Temp: Amphotericin, Antihistamines, Methyldopa, PCN, Phenytoin, Salicylates, Sulfonamides

Conditions that Increase Temp: Virus, Infection, Tumors Rheumatoid Arthritis, ETOH Withdrawal, Antibiotics, Hyper-Thyroid, Recent vaccinations

My Nursing Notes

VASODIALATION of SKIN BLOOD VESSELS
Skin becomes Flushed, Warm–Radiates Heat from Skin

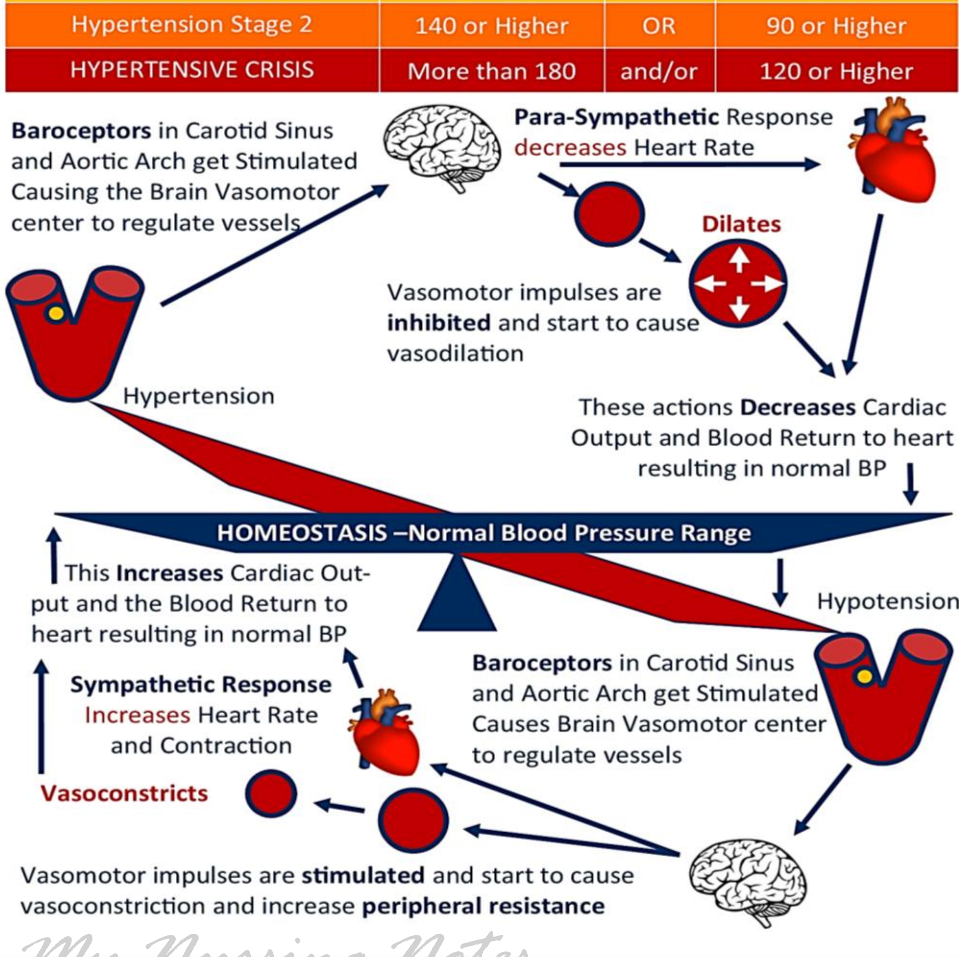


Unit 2 — VITAL SIGNS-BLOOD PRESSURE

Blood Pressure is the pressure of the blood in the circulatory system, often measured for diagnosis since it is closely related to the force and rate of the heartbeat and the diameter and elasticity of the arterial walls.

Blood Pressure Classification

CLASSIFICATION	SYSTOLIC-mm hg		DIASTOLIC mmHg
Hypotension	Less than 100	or	Less than 60
NORMAL	100-120	and	60-80
ELEVATED	120-129	and	Less than 80
Hypertension Stage 1	130-139	an	80-89
Hypertension Stage 2	140 or Higher	OR	90 or Higher
HYPERTENSIVE CRISIS	More than 180	and/or	120 or Higher



My Nursing Notes

Taking a Manual Blood Pressure Step-by-Step Procedure

1.Position the cuff
- Place cuff on upper arm, 1–2 inches (2–3 cm) above the elbow crease.
- Align the artery marker over the brachial artery.

2.Find the brachial pulse
- Palpate the brachial pulse with your fingertips.

3. Inflate the cuff
- Inflate quickly to 30 mmHg **above** where the brachial pulse disappears.

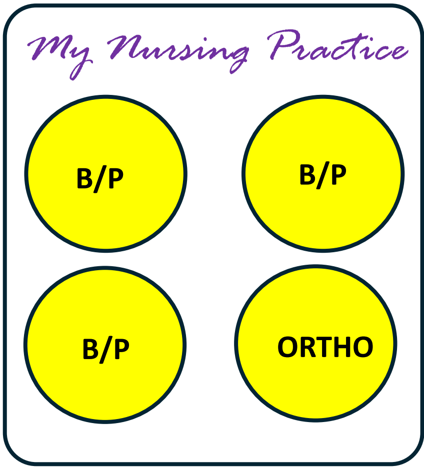
4. Auscultate (Listen)
- Place stethoscope over the brachial artery (below the cuff).
- Deflate the cuff slowly (2–3 mmHg per second).

5. Record the reading
- **Systolic** = First clear tapping sound
- **Diastolic** = Sound disappears

Example: 120/80 mmHg.

6. Complete the procedure
Fully deflate and remove the cuff.
Document the results.

Good to Know!
•Always use the **same arm** for consistency unless contraindicated.
•If reading is high or low, **wait 1–2 minutes** and retake.
•Never take BP on an arm with a **fistula, mastectomy, or IV**.
•Common error: Deflating too fast → inaccurate reading.



Unit 2

VITAL SIGNS-PULSE (Heart Rate) HR

Heart Rate is the speed of the heart contraction that is normally counted for 15 seconds and multiplied by four. The normal adults heart rate is 60-100 beats per minute (bpm) and regulated by the Autonomic Nervous System.

The heart rate can vary according to the body's physical needs, including the need to absorb oxygen and excrete carbon dioxide. It is usually equal or close to the pulse measured at any peripheral point. Activities that can provoke change include physical exercise, sleep, anxiety, stress, illness, and ingestion of drugs.

Heart Rate Classification

Bradycardia– Less than 60 bpm

Normal Heart Rate– 60 bpm- 100bpm

Tachycardia– Greater than 100bpm

Heart Rate is controlled by the **Sympathetic Nervous System** which controls the **SA– Node (Accelerator Nerve)** Once stimulated it releases neurotransmitters (ACH-Nicotinic, Nor-epinephrine) that increase the hear rate, also contractility in the ventricles.

Peripheral Pulses

Rate: BPM Minute—60-100
Rhythm: Regular or Irregular
Symmetry: Even Uneven
Amplitude:
4 = Bounding
3 = Increased
2 = Normal
1 = Weak
0 = Absent or No palpable
Capillary Refill: <3 Seconds Normal

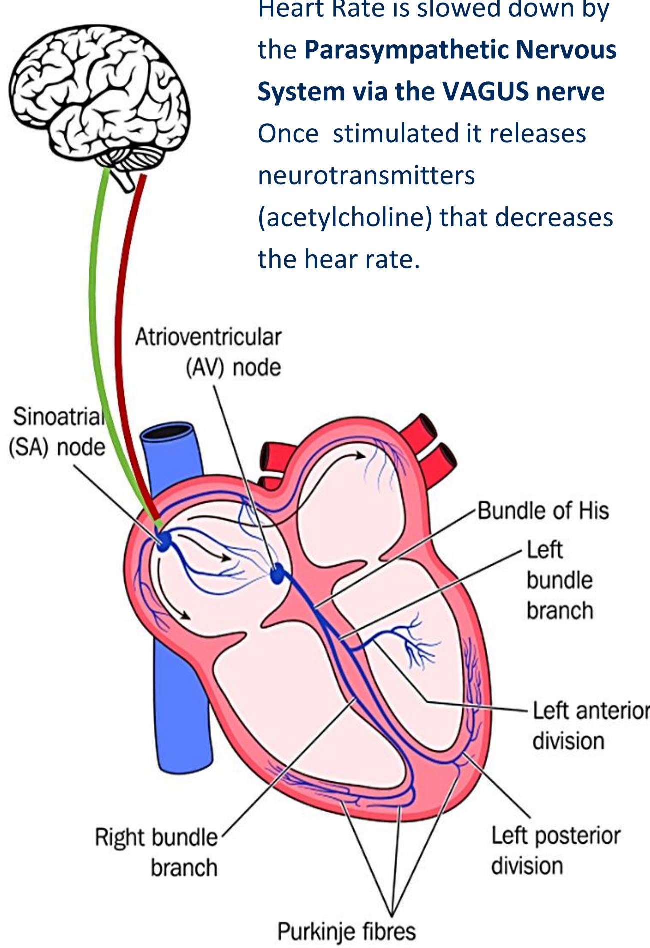
Cause of Tachycardia

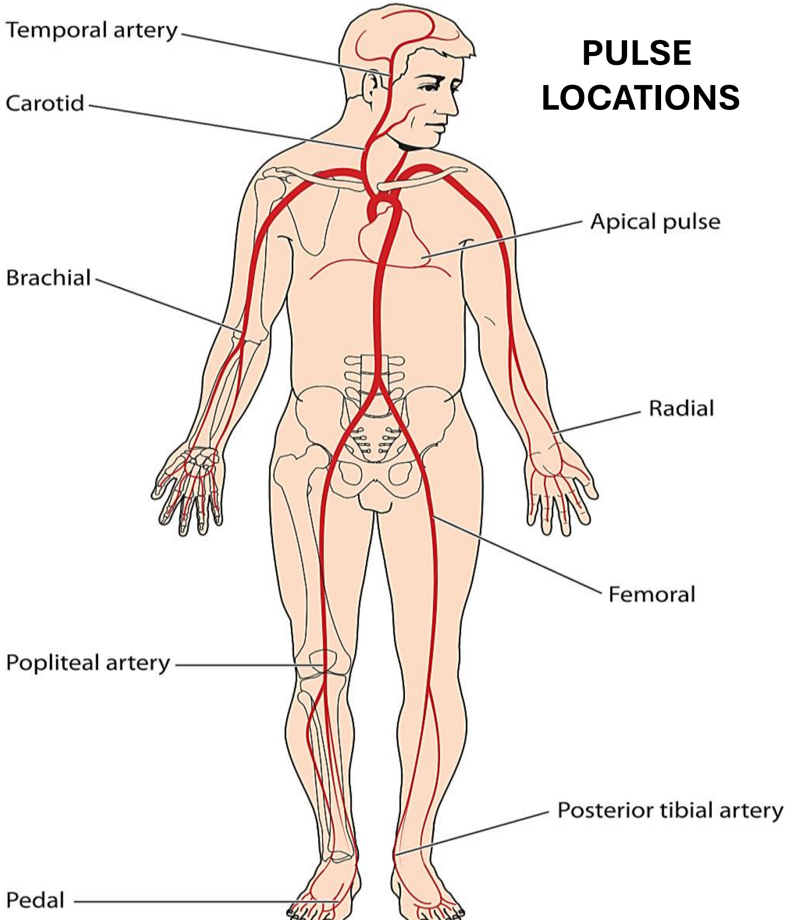
T	Temperature(Fever)
A	Anxiety / Anemia
C	Cardiac(CHF,MI)
H	Hypovolemia
Y	"Your drugs"
C	Compensation-Shock
A	Acidosis(DKA)
R	Respiratory(PE,COPD
D	Dehydration / Drugs withdrawal
I	Infection(SEPSIS)
A	Arrhythmias(AFIB,SVT)

Causes of Bradycardia

A	Athlete
B	Beta-Blockers (metoprolol)
C	Ca-Blockers (diltiazem)
D	Digoxin
E	Electrolytes (Potassium Low)

Heart Rate is slowed down by the **Parasympathetic Nervous System via the VAGUS nerve** Once stimulated it releases neurotransmitters (acetylcholine) that decreases the hear rate.





Unit 2 — VITAL SIGNS-RESPIRATIONS LUNG SOUNDS & PULSE OXIMETRY

Respirations are counted for 30 seconds and multiplied by 2 if normal and 1 minute if they appear abnormal
Normal Respirations are 12-20

RESPIRATION REGULATION

Respiration is the body's automatic process of controlling **how fast** and **how deep** we breathe to maintain normal oxygen (O_2), carbon dioxide (CO_2), and blood pH levels.

The Main Goal
The purpose of respiration is to:
Deliver **oxygen (O_2)** to the body's cells.
Remove **carbon dioxide (CO_2),** a waste product of metabolism.
Maintain a normal blood pH (7.35–7.45).

Abnormal Breath Sounds Classification

Hyperventilation > 24 Breaths a Minute

Tachypnea > 20 Breaths a Minute

Bradypnea < 12 Breaths per minute

Apneustic– deep gasping and pause in inspiration then breathing

Cheyne Stokes-progressively deeper, and sometimes faster, *breathing* followed by a gradual decrease that results in a temporary stop in *breathing* called an apnea.

Kussmaul: Rapid Deep, labored, Hyperventilate

Adventitious Breath Sounds

Crackles Rales Best heard on inspiration, unrelieved by coughing

Wheezes Best heard on expiration, not cleared with coughing

Rhonchi Best heard on expiration, relieved by coughing

Stridor High Pitched on Inspiration

Diminished low amplitude at generally at bases with COPD

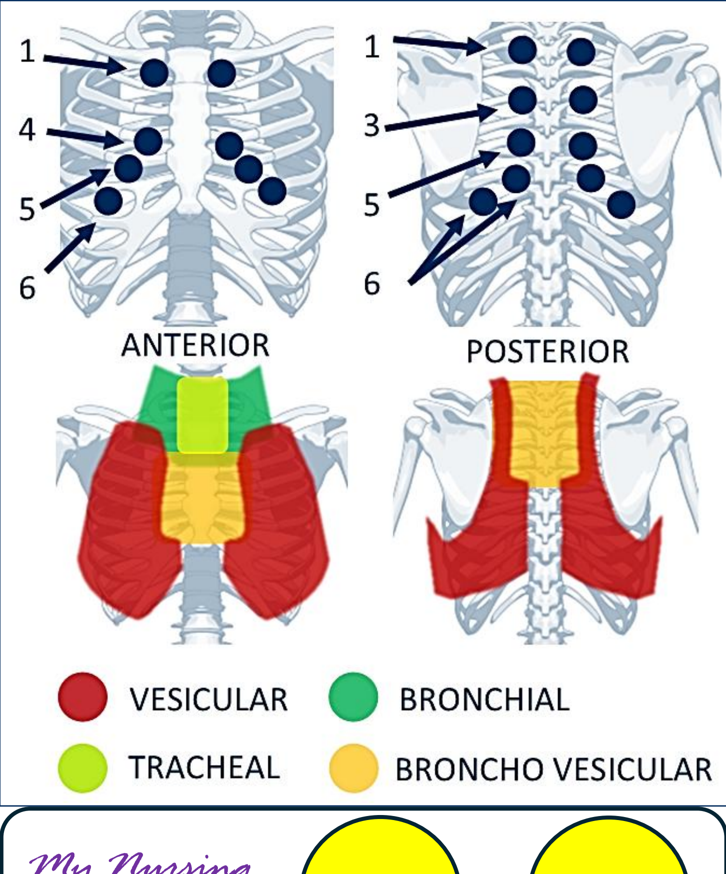
Absent are acute and need intervention

PULSE OXYMETRY— SpO2

Pulse oximetry is a non-invasive method used to estimate the percentage of hemoglobin in the blood that is carrying oxygen. It tells us how well oxygen is being transported to the body's tissues, it does not measure how well a patient is breathing.

SPO2	Nursing Interventions
>95 %	Considered normal and requires no invasive intervention.
91%-94	Considered borderline, Assess probe placement, Assess patient, Elevate bed, Encourage turn cough deep breath
85-90	Immediate intervention needed. Assess patient, Elevate bed, Encourage turn cough deep breath assess airway.

AUSCULTATION OF BREATH SOUNDS



My Nursing Practice

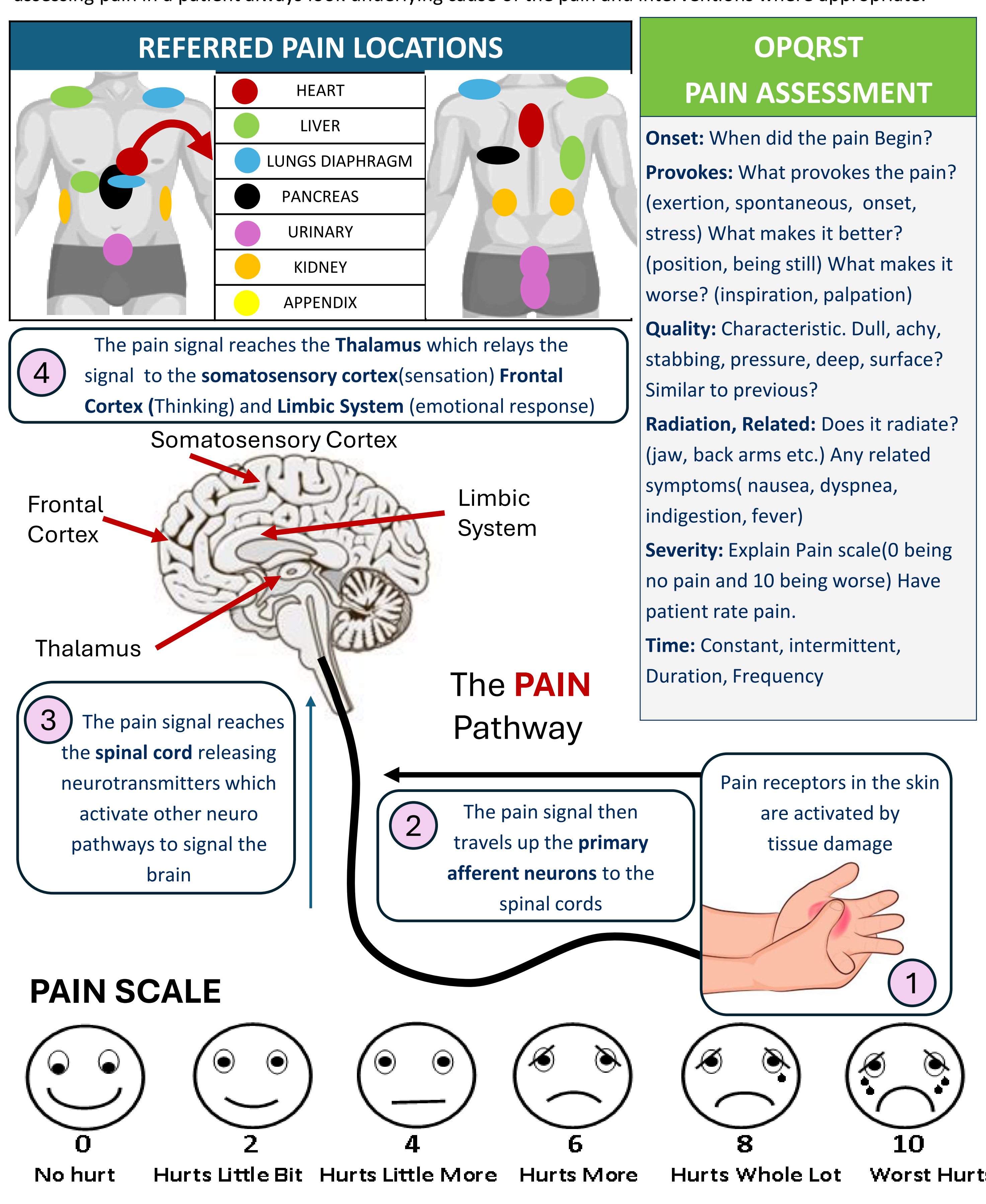
BS

BS

My Nursing Notes

Unit 2 VITAL SIGNS-PAIN ASSESSMENT

Nociception is the response to harmful stimuli. The pain pathway travels from the stimulus to the brain. When assessing pain in a patient always look underlying cause of the pain and interventions where appropriate.

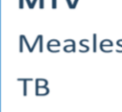


Unit 2 PPE & HANDWASHING

	Standard	Contact	Droplet	Airborne
Clinical Situation	Everyone	Resistant Organism, Diarrhea, Wound	Upper Respiratory Infections	TB, Measles, Chicken Pox, Laryngeal Disease
Room	Private, Semi Pvt	Private Cohorting	Private or Cohorting 3 ft	Private Negative pressure Door Closed
Gloves	ⓘ	✋	ⓘ	ⓘ
Mask	ⓘ	ⓘ	😷	😷 N-95
Gown	ⓘ	🥼	ⓘ	ⓘ

Donning Order
Wash First

Doffing Order
Wash Last



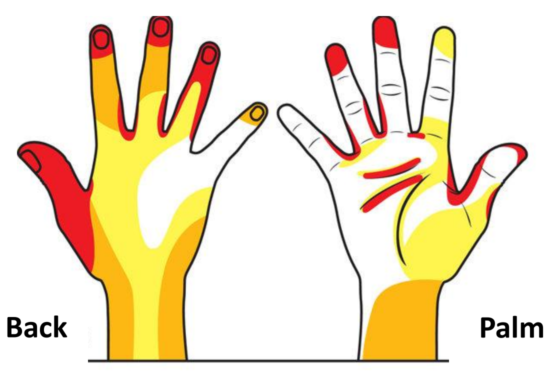
MTV
Measles
TB
Varicella

CRIMP
Covid-10
Rubeola
Influenza
Mumps
Pertussis

MRS VRE WEE
MRSA
RSV -VRE
Scabies
Wounds
Enteric (C. diff)
Eye infections

ⓘ Any unknown risk wear Gloves, Mask, Gown

- 🟢 AIDS/HIV
- 🟢 ⚪ Adenovirus
- 🟢 Anthrax 🔴 (Lesions)
- 🟢 Aspergillosis
- 🟢 Babesiosis
- 🟢 Botulism
- 🟢 Bronchiolitis
- 🔴 🔵 Chicken Pox (Varicella)
- 🔴 Clostridium difficile (C-Diff)
- 🟢 Colorado Tick Fever’
- 🟢 CMV-Cytomegalovirus
- ⚪ 🔵 Corona –Covid-19
- 🟢 Hepatitis B,C,D,E,G
- 🟢 Herpes Zoster 🔴 (Lesions)
- 🔴 Histoplasmosis
- ⚪ Impetigo
- ⚪ Influenza
- 🔴 Lice (scabies)
- 🔴 MRSA
- 🔴 MDRO-VRSA
- ⚪ 🔵 Measles
- ⚪ Meningitis (Bacterial)
- ⚪ Mumps
- 🔴 Parainfluenza
- ⚪ Parvovirus B19
- ⚪ Pertussis
- 🔴 RSV
- 🔴 Rota Virus
- 🔵 TB Tuberculosis
- 🔴 VRE



Areas Most Often Missed During Hand Washing

- Most Often Missed
- Often Missed
- Less Often Missed

My Nursing Practice

H/W
PPE
GLOVES
ROOM ID PPE

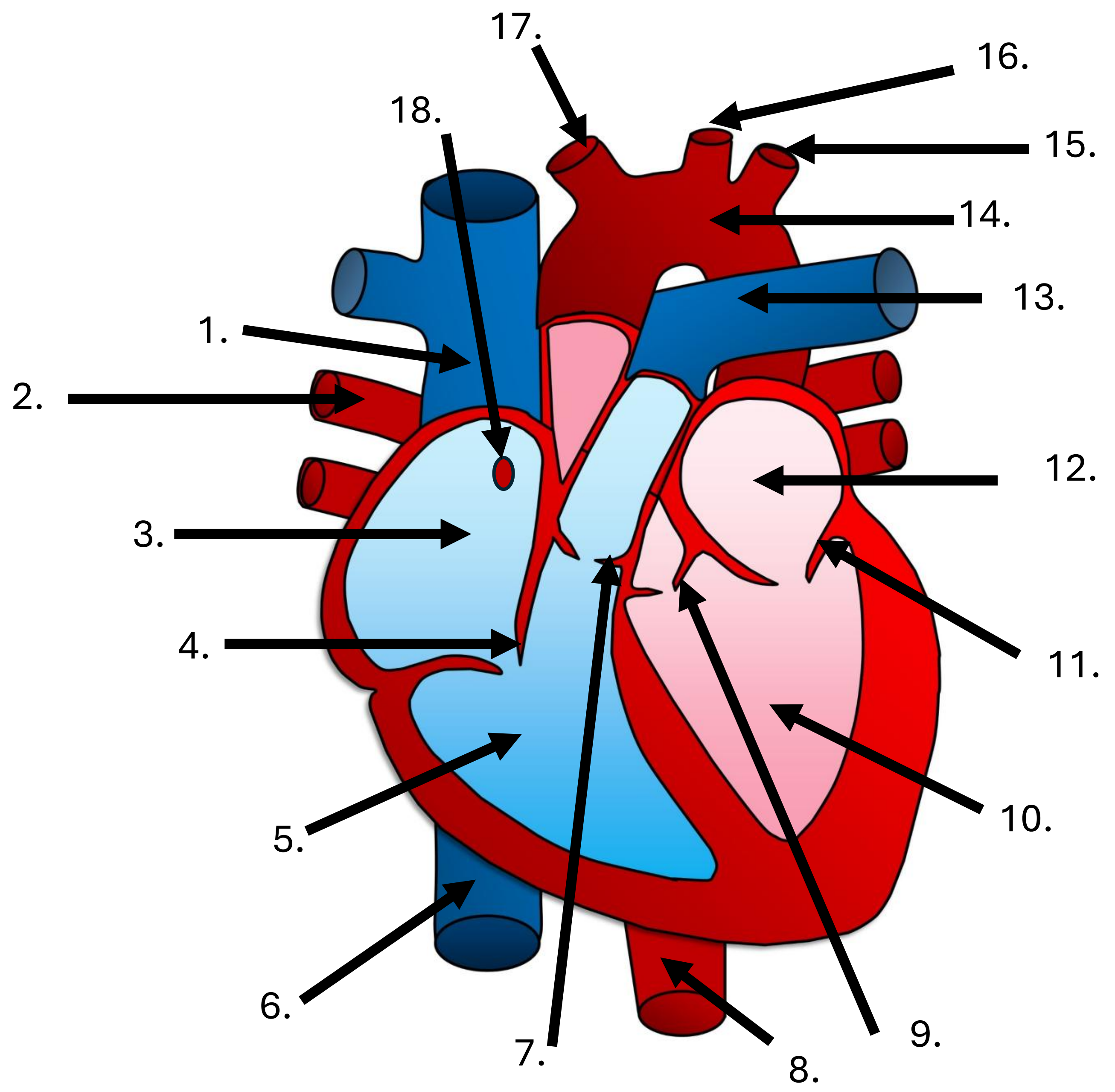
Unit 3 CARDIOVASCULAR ASSESSMENT

Concepts Covered	Skills In the Lab
Cardiovascular System Coronary Artery Disease (CAD) Congestive Heart Failure (CHF) Cardiac Assessment Perfusion Circulation Cardiac Anatomy and Physiology Heart Sounds Pulse Assessment Edema Assessment Oxygenation and Tissue Perfusion	Focused Cardiac Assessment Apical Pulse Pulse Locations Heart Sound Identification Edema Assessment Capillary Refill Assessment Cardiac Case Study

MEDICATIONS TO KNOW- MED CARD ASSIGNMENT

Medication	Drug Class	Primary Indications	Key Nursing Considerations & Monitoring
Metoprolol Succinate	Beta-1 Blocker (Cardioselective)	Hypertension, Angina, Heart Failure, Post-MI	Monitor for B's Bradycardia HR (hold if <60) BP Systolic < 100 , fatigue, worsening HF; do not crush ER form. May mask hypoglycemia
Lisinopril	ACE Inhibitor	Hypertension, Heart Failure, Post-MI	Monitor BP, renal function, potassium; watch for dry cough, angioedema, hyperkalemia.
Losartan	Angiotensin II Receptor Blocker (ARB)	Hypertension, Heart Failure, Diabetic Nephropathy	Monitor BP, renal function, potassium; fewer cough issues than ACEIs; good alternative if cough occurs.
Nitroglycerin (SL)	Nitrate (Vasodilator)	Acute Angina, Chest Pain	Administer SL for acute relief; monitor for headache, hypotension, dizziness; store properly; avoid with PDE5 inhibitors.
Furosemide	Loop Diuretic	Edema (HF, etc.), Hypertension	Monitor electrolytes (esp. K+), fluid status, renal function; watch for dehydration, ototoxicity with high doses.
Atorvastatin	Statin (HMG-CoA Reductase Inhibitor)	Hyperlipidemia, CVD Prevention	Monitor liver enzymes & lipids; advise evening dosing; watch for muscle pain (myopathy/rhabdomyolysis).
Simvastatin	Statin (HMG-CoA Reductase Inhibitor)	Hyperlipidemia, CVD Prevention	Similar to atorvastatin; more drug interactions (e.g., with certain antibiotics); evening dosing preferred.
Enoxaparin	Low Molecular Weight Heparin (Anticoagulant)	DVT/PE Prevention & Treatment, ACS	Monitor for bleeding; SC administration; check platelets (HIT risk); renal dosing adjustments.

Unit 3 CARDIOVASCULAR ASSESSMENT



1	7	13
2	8	14
3	9	15
4	10	16
5	11	17
6	12	18

Unit 3 CORONARY ARTERY DISEASE(CAD)

NURSINGKAMP **Cardiac Complications** Atherosclerosis vs Arteriosclerosis

Coronary Artery Disease (CAD) is a "generic" term describing the narrowing of the coronary arteries. These arteries are responsible for carrying oxygenated blood to the heart. Atherosclerosis and Arteriosclerosis are the specific terms describing the cause of CAD.

Atherosclerosis

Atherosclerosis (problem "at the Wall") where there is a build up plaques on the wall that can result in them breaking off and lodging into the coronary artery resulting in angina leading to a Myocardial Infarction or Acute Coronary Syndrome.

Anticipate This

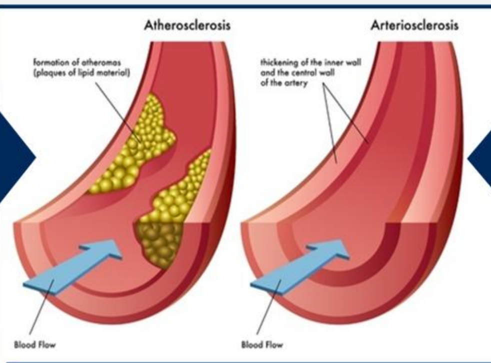
Treat Hypertension with Ace Inhibitors, ARB's, Beta-blockers, Calcium Channel Blockers- Treat Cholesterol with Statins

Look for?

Developing Plaque's breaking off mobilizing and blocking coronary arteries resulting in Chest Pain, Risk of Rupturing

Do This?

CHEST PAIN is acute notify MD-Stay With Pt, EKG, Vitals, Think Oxygen -HONAMB



Both Risk?

Smoking, Stress, Diabetes, Obesity, Alcohol, Hypertension, Hereditary

Encourage Lifestyle Changes

Anticipate?

Calcium Study- Identifies Start of CAD

Triglycerides<200 Want Low

LDL<150(LOW dl) Want Low

HDL>40Female Male > 50 Want High

CRP- <3 (Inflammation Marker) Want Low

HgbAlc <7 Diabetes Marker Want Low

Arteriosclerosis

Arteriosclerosis the problem is in the wall causing the inability of the vessels to dilate or react to the increase of oxygen demand. This results in angina if not treated leading to a Myocardial Infarction or Acute Coronary Syndrome.

Anticipate This

Treat Hypertension with Ace Inhibitors, ARB's, Beta-blockers, Calcium Channel Blockers- Treat Cholesterol with Statins

Look for?

Coronary Arteries are unable to Vasodilate due to hardening of the arteries resulting in Angina symptoms still at Risk for Rupturing, Chest Pain

Do This?

CHEST PAIN is acute notify MD-Stay With Pt, EKG, Vitals, Think Oxygen -HONAMB

My Nursing Notes

Unit 3 CHF – CONGESTIVE HEART FAILURE

NURSINGKAMP Congestive Heart Failure – Right vs Left CHF & Cardiomyopathies

Congestive Heart Failure(CHF) is a chronic and general term meaning that the heart cannot pump the heart forwards so the blood gets backed up on that side. This can be caused by long term valve issues and myocardial infarctions . Heart Failure includes – Right vs Left Sides & Cardiomyopathies with a primary goal of preventing exacerbations. Ejection fractions less than 50% is concerning.

Right Sided Heart Failure

This side is more Chronic since the Right Ventricle cannot pump blood through the pulmonary artery causing it to back up into the body causing increase fluid in the body or "Edema" Think **RIGHT WET HEAD GO REST** meaning **WET**(Congestive symptoms **HEAD** **H**epatomegaly, **E**dema Peripheral, **A**scites, **D**istended Neck Veins(JVD) **Go Rest= Fatigued.**

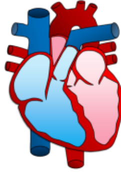
EXCACERBATION CAUSES

- H-Hypertension
- E-Endocrine(Thyroid)
- A-Anemia
- R-Rheumatic Disease
- T-Toxins (staph)
- F-Failure to take meds
- A-Atrial Fibrillation
- I-Infection Myocarditis
- L-Lungs-PE/Pneumonia
- E-Electrolytes
- D-Diet (SALT

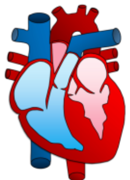
Left Sided Heart Failure

This side is more acute since the Left Ventricle cannot pump blood through the aorta so it backs up into the lungs causing increase fluid in the lungs or "Crackles" Think **LEFT LUNGS CHOP & LEFT THE ORGANS OUT**. Meaning SOB and Crackles, **CHOP** **C**ough, **H**emoptysis, **O**rthopnea, **P**ulmonary congestion & Fatigue and **lack of organ perfusion kidneys, brain.** **S3, S4 Heart Sounds**

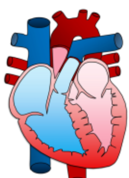
Other Causes of CHF Heart Failure



Dilated Cardiomyopathy damaged muscle fibers resulting in thinning and dilation reducing contractility and cardiac output.



Hypertrophy Cardiomyopathy (Big Trophy Heart) thickening of the Intraventricular Septum or Ventricle



Restrictive Cardiomyopathy caused by hemochromatosis, Cancers, Chemo, Radiation therapy, Sarcoidosis, Amyloidosis

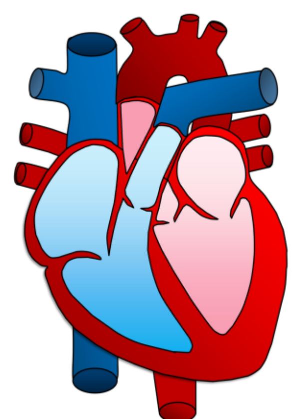
MEDICATIONS

Medication Treatments are based on decreasing PRELOAD or AFTERLOAD

Decrease Preload	Decrease Afterload
K-PUB LATE	**AFTER PINE LANDS**
K-Potassium Monitor	After-Afterload
P-Preload Meds	Pine- Ca-Blockers
U-Urine Focused	(amlodipine)
B-Bumetanide(Bumex)	L-Lisinopril
L-Lasix(Furosemide)	A-Ace Inhibitors
A-Aldactone- K Sparing	N-Nifedipine
T-Thiazide Diuretics	D-Diltiazem (acute)
E-Elevated BUN/CR Risk	S-Sartans (ARB's)

Nursing Interventions

Low sodium Diet Fluid Restriction
Sitting up High Fowlers
Assist with O2 – Think medications



PRELOAD = Preparation / filling before contraction" (stretch/volume)
AFTERLOAD = After filling, the load it pushes against" (resistance/pressure).

DIAGNOSTICS: BNP - Chest x-ray, ECG, Echocardiogram Hemodynamics CVP, Cardiac Output, Ultrasound

Pump Problem

Unit 3 STARTING THE PRIMARY ASSESSMENT

Before we start....

What is a Primary Assessment- is the information you collect about your patient – CHRONIC
When? Why? **DIAPHRAGM**

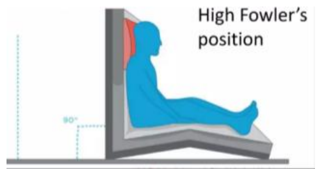
What is a Secondary Assessment- what else do you need to know about your patient- ACUTE
When? Why **BELL**

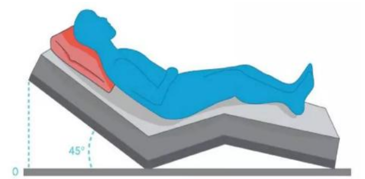
PRIMARY ASSESSMENT = Assessment before Implementation

What do you need? Stethoscope and Vital Signs Equipment

WALKING INTO THE ROOM

T-Title Hi I am a Nursing Student with...
I-Introduce My name is......
C-Consent Would you mind if I did my vital signs and assessment on you?





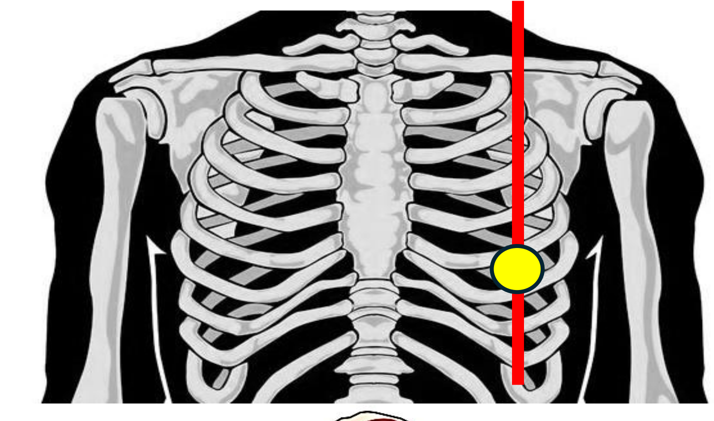
Place the BP Cuff on

Unit 3 PRIMARY ASSESSMENT OF CARDIAC

Assessment starts with putting a **Blood Pressure cuff** on the patient.

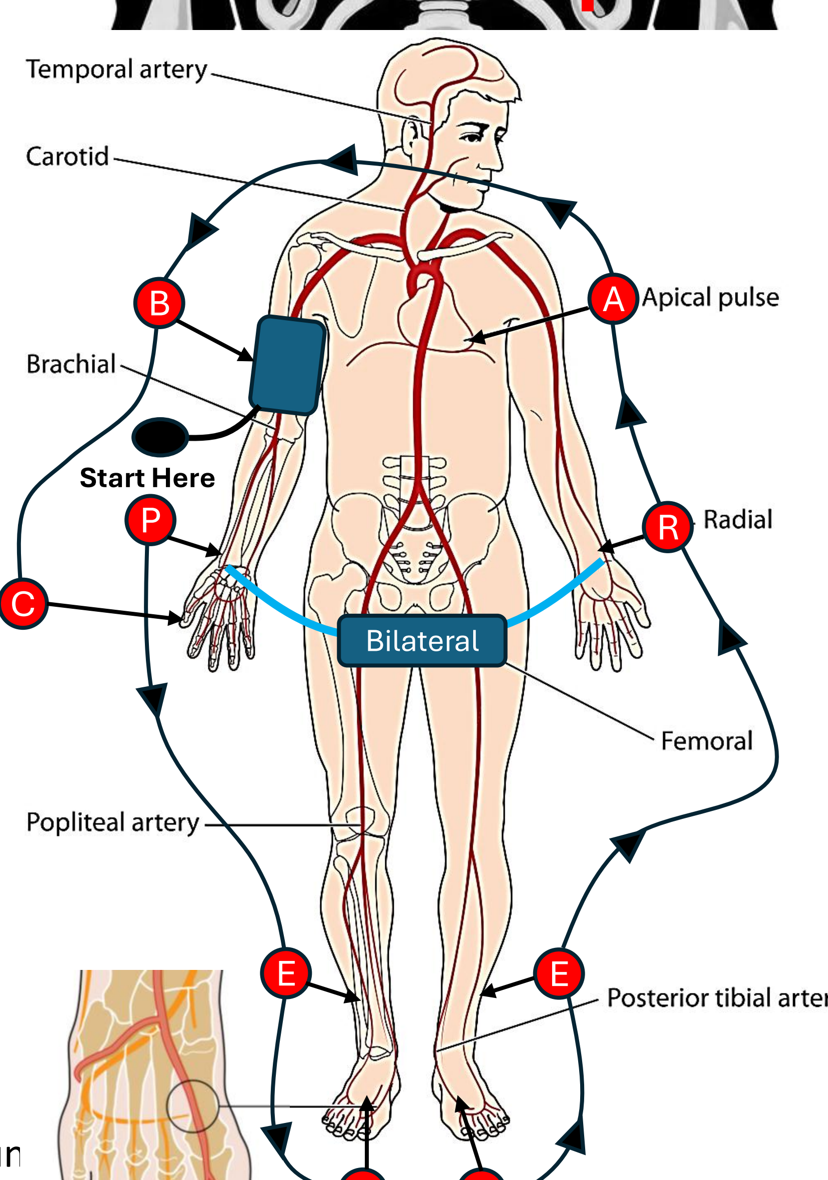
CARDIAC ASSESSMENT-PEPPERABC	
P	Pulse- Count 15 seconds x 4
E	Edema – Present or not is it bilateral?
P	Pedal- Is it Palpable or not
P	Pedal- Is it Palpable or not
E	Edema- Present or not is it bilateral?
R	Radial Bilateral- Equal 5 seconds
A	Apical- 60 seconds-1 minute S1, S2
B	Blood Pressure- Press Button/Manual
C	Capillary Refill – Is it < 3 seconds

Listen with Diaphragm for the **Apical Heart** rate for 1 minute in the 5th intercostal space mid clavicular line. Heart Sounds **S1**-**Mitral** & **Tricuspid** Valves Closing **S2**= **Pulmonic** and **Aortic** Valve Closing



Peripheral Pulses

Rate: BPM Minute—60-100
Rhythm: Regular/Irregular
Symmetry: Even Uneven
Amplitude:
4 = Bounding
3 = Increased
2 = Normal
1 = Weak
0 = Absent or No palpable



Dorsalis Pedis(Pedal)

Peripheral Edema

Observe edema foot, ankles, legs

Bilateral (chronic) Unilateral (acute)

1+ (1 mm) Rebounds Immediately

2+ (2-4mm) Seconds to Rebound

3+ (5-7mm) 10-12 Seconds to Reboun

4+ (>7mm) >20 Seconds to Rebound

Unit 4 PULMONARY ASSESSMENT

Concepts Covered	Skills In the Lab
Respiratory System Oxygenation Ventilation Gas Exchange Chronic Obstructive Pulmonary Disease (COPD) Respiratory Assessment Oxygen Therapy Lung Sounds Airway Management Respiratory Equipment	Focused Respiratory Assessment Pulse Oximetry Assessment Lung Sound Identification Stethoscope Placement Nasal Cannula Non-Rebreather Application Bag Valve Mask Incentive Spirometer Introduction to Chest Tubes Introduction to Tracheostomy Care

MEDICATIONS TO KNOW – MED CARD ASSIGNMENT

Medication	System	Drug Class	Primary Use	Most Likely Diagnosis / Indication
Albuterol Inhaler	Respiratory	Short-acting Beta-2 Agonist (SABA)	Quick relief of bronchospasm	Acute asthma exacerbation, COPD flare, wheezing
Budesonide (Inhaled)	Respiratory	Inhaled Corticosteroid	Long-term control of airway inflammation	Asthma maintenance, COPD management

PULMONARY DEVICES TO KNOW & Nurses Notes on Observation

Device	What It Is	Why It's Used	Top 3 Things You Should Know (Fundamentals)
Nasal Cannula	Low-flow oxygen delivery device (soft prongs in nostrils)	Deliver supplemental oxygen for mild to moderate hypoxia	1. Flow rate 1–6 L/min (24–44% FiO_2) 2. Comfortable for long-term use; patient can eat/talk 3. Humidify if >4 L/min to prevent nasal dryness
Is it on the patient, What is the liter flow? What is the patients SpO2? Do they normally have it on or just put it on in the hospital?			
Non-Rebreather Mask-NRB	High-flow oxygen mask with reservoir bag and one-way valves	Deliver high concentration oxygen in emergencies	1. Flow rate 10–15 L/min (up to 90–100% FiO_2) 2. Reservoir bag must stay inflated 3. Used for severe hypoxia or shock; never remove reservoir
ACUTE - Why is this on patient? What is the patients SpO2? Are they breathing on there own? What is their respiratory rate?			
Bag Valve Mask (BVM)	Hand-held manual ventilation device (Ambu bag)	Positive pressure ventilation during respiratory arrest	1. Use with 2-person technique when possible 2. Deliver 1 breath every 5–6 seconds (10–12/min) 3. Ensure chest rise; attach to oxygen for 100% FiO_2
ACUTE USE ONLY – Look beside the head of the bed is it there? Do you know where they are?			
Incentive Spirometer	Hand-held device that encourages deep breathing	Prevent atelectasis and improve lung expansion	1. Goal: 10 slow deep breaths per hour while awake 2. Sit upright; hold breath for 3–5 seconds 3. Used post-op or with pneumonia/COPD
Is it bedside within reach of the patient? Have they been doing it? Can the patient ambulate? What is their pain if **POSTOP?**			
Chest Tube	Flexible tube inserted into pleural space in chest	Remove air (pneumothorax) or fluid (hemothorax)	1. Keep below chest level; never clamp without order 2. If not bubbling or tidaling notify nurse. 3. Assess for cessation of drainage or respiratory distress
Is it below chest? Is it a dry or wet suction? Is it connected to suction? Where is the position of high? Low? What color is the Drainage?			
Tracheostomy (Trach)	Surgical airway opening with tube in trachea	Maintain patent airway when upper airway is bypassed	1. Keep inner cannula clean; have spare trach at bedside 2. Suction only as needed; use sterile technique 3. Never occlude stoma; emergency trach replacement if dislodged
How are they breathing? What is there SpO2? Lung sounds? Do they have humidification connected. Is the trach sutured or just ties?			
Yan Kauer Suction catheter	Rigid curved oral suction catheter	Clear secretions, vomit or blood from mouth and pharynx .	1. Used for oral/pharyngeal suctioning only 2. Apply suction only on withdrawal 3. Keep at bedside for patients at risk of aspiration
Why is at the bedside? Why does the patient need suctioning? How is their airway? Assess Lung Sounds, Check Resp Rate and SpO2			

PULMONARY ASSESSMENT

NURSINGKAMP COPD General Overview –Pulmonary -Asthma - Bronchitis - Emphysema

COPD –Chronic Obstructive Pulmonary Disease is a collection chronic diseases that are further classified. Sometimes just referred to COPD—it is important to identify which actual COPD is being treated since treatment, interventions, and medications are often differ-

ASTHMA

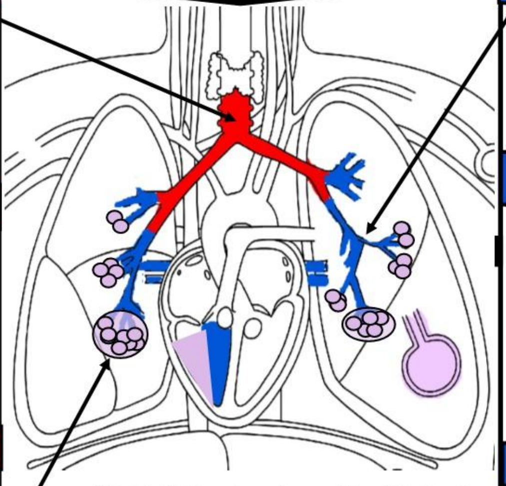
Chronic condition that has exacerbations triggered by external factors = Environmental (warm to cold) Smoke, Allergens, Pollutants, Molds, Seasonal Allergens, Stress, Infections

Looks Like! Wipe SCAM!

- W-Wheezes
- I-Inspiratory –Expiratory
- P- Prolonged
- E- Exhalation
- S-Stress/Anxiety
- C-Coughing
- A-Accessory
- M-Muscles

Do This!

Albuterol is the only rescue inhaler to be used first! High Fowlers-VS, Oxygen - Medications Stay with patient in an Asthma Exacerbation treatment options are based on prevention and limiting exacerbations.



Think! All Treatments are Specific to the COPD and Condition- All pulmonary meds are considered "BS" meaning Bronchodilators are used with Steroids! The bronchodilator are used first to open the Airway while the Steroids Suppresses inflammation

BRONCHITIS

Chronic condition that has exacerbations and can result in infections from continuous chronic exposure to irritants (smoking) that affects the bronchioles and bronchi

Looks Like! Hey Blue Cops Care

- Hey Hemoglobin High
- C-Coughing
- O-O2 Deprivation
- P-Purulent
- S-Sputum
- Blue- Blue Appearance
- C-Clubbing
- A-Accessory Muscles
- R-Recurrent infections
- E-Exertion –SOB

Do This!

Albuterol is the only rescue inhaler to be used first! High Fowlers- VS, Oxygen - Nasal Canular then Venti Mask leading to High Flow Oxygen. Treatment is based on treating underlying infection and limiting future exacerbations

Emphysema

Chronic Condition resulting in the permanent destruction of airspaces below bronchioles causing "air trapping, co2 retention often requiring permanent Oxygen Therapy

Looks Like!

"Pink (color) Barrel Hot Rods"

- Barrel Chest
- Hyperinflation
- Orthopneic
- Thin
- Right Sided CHF
- Older
- Diaphragm Flattened
- S-SOB at Rest

Do This!

Assess Vitals Encourage pursed lips breathing–Tripod Position– No NRB and Caution on increasing O2 due to losing the hypercarbic drive to breath.

My Nursing Notes

Unit 4 PULMONARY INCENTIVE SPIROMETER

My Nursing Notes

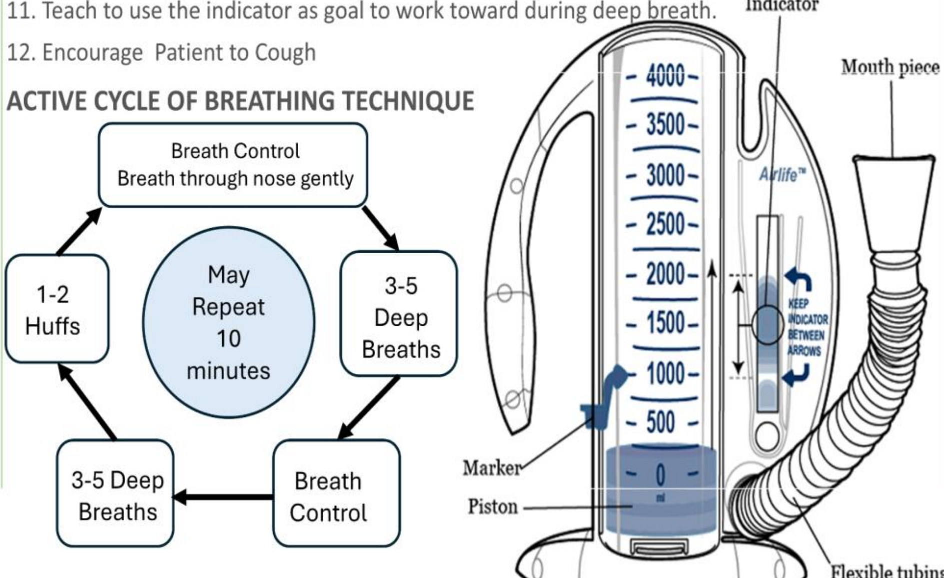
PULMONARY HYGEINE I-COUGH

- **I-** Incentive spirometry,
- **C-**Coughing and deep breathing,
- **O-**Oral care (brushing /mouthwash 2x's daily),
- **U-**Understanding (education),
- **G-**Getting out of bed frequently (3 x's daily)
- **H-**Head-of-bed elevation.

INCENTIVE SPIROMETRY

1. Have patient sit on the edge of bed if possible, or sit up
2. Hold the incentive spirometer in an upright position.
3. Place the mouthpiece in pt. mouth and seal lips tightly around it.
4. Have patient Breathe in slowly and as deeply as possible.
5. Notice the yellow piston rising toward the top of the column.
6. Observe the yellow indicator should reach the blue outlined area.
7. Have pt. hold their breath as long as possible (5 seconds).
8. Have pt. exhale slowly allow the piston to fall to the bottom of column.
9. Rest for a few seconds Repeat steps 1-5 at least 10 times hour.
10. Record -Position the yellow indicator on left side to show best effort.
11. Teach to use the indicator as goal to work toward during deep breath.
12. Encourage Patient to Cough

ACTIVE CYCLE OF BREATHING TECHNIQUE



Unit 4 PULMONARY ASSESSMENT DEVICES

My Nursing Notes

Nasal Cannula

Can Eat, Drink, Talk Higher flow can be dry to nasopharyngeal area use humidifier- Front Line for Alert, Oriented Not as accurate % O2

1	24 %
2	28 %
3	32 %
4	36 %
5	40 %
6	44 %

Non-Rebreather

Delivers up to 95-100% Oxygen with both flaps intact Mask has two flaps that may be removed to change FiO2 %

10-15	80-100 %

80-85%
Both Flaps Removed

85-90%
One Flap Removed

Bag Valve Mask (BVM)

100% Oxygen Delivery for manual ventilation, for unconscious patients or unable to oxygenate.

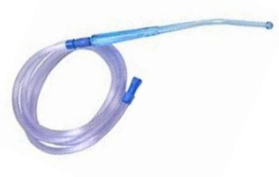
Chest Tube

Removes air (pneumothorax) or fluid (hemothorax) from the pleural Space

Tracheostomy Tube

Artificial airway device that allows the patient to breath through and maintain oxygenation

Yankauer Suction



Artificial airway device that allows the patient to breath through and maintain oxygenation

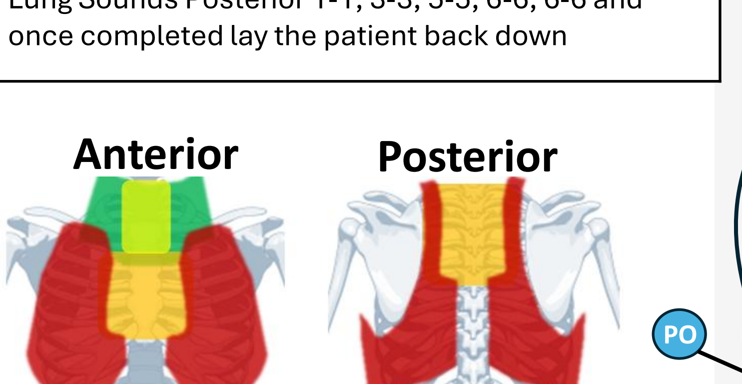
Unit 4 PULMONARY PRIMARY ASSESSMENT

Pulmonary assessment starts with you putting the Pulse Ox on the patient

PULMOMARY ASSESSMENT – POLAR-L	
P	Pulse (attach pulse oximetry)
O	Oximetry assess oxygenation
L	Lung Sounds 1-1, 4-4, 5-5, 6-6 (intercostal spaces)
A	Assess Pain – then ask them to sit up
R	Rear Respirations Count while listening to Posterior
L	Lung Sounds Posterior 1-1, 3-3, 5-5, 6-6, 6-6 and once completed lay the patient back down

Respirations are counted for 30 seconds and multiplied by 2 if normal and 1 minute if they appear abnormal.

Normal Respirations are 12-20



VESICULAR

BRONCHIAL

TRACHEAL

BRONCHO VESICULAR

LA

PO

Start Here

Anterior

Assess Pain BEFORE Sitting the Patient Up

R

L

Posterior

Sounds	Duration	Intensity Expiratory	Pitch Expiratory
Vesicular	Inspiration Last longer than Exp.	Soft	Relatively Low
Broncho Vesicular	Inspiration and Expiration Equal	Intermediate	Intermediate
Bronchial	Expiration longer than Inspiration	Loud	Relatively High
Tracheal	Inspiration and Expiration are	Very Loud	Relatively High

Abnormal Breath Sounds Classification
Hyperventilation > 24 Breaths a Minute
Tachypnea > 20 Breaths a Minute
Bradypnea < 12 Breaths per minute
Apneustic– deep gasping and pause in inspiration then breathing
Cheyne Stokes-progressively deeper, and sometimes faster, *breathing* followed by a gradual decrease and apnea.
Kussmaul: Rapid Deep, labored, Hyperventilate

Adventitious Breath Sounds
Crackles Rales Best heard on inspiration, unrelieved by coughing
Wheezes Best heard on expiration, not cleared with coughing
Rhonchi Best heard on expiration, relieved by coughing
Stridor High Pitched on Inspiration
Diminished low amplitude at generally at bases with COPD
Absent are acute and need intervention

Unit 5 ABDOMINAL ASSESSMENT

Concepts Covered	Skills In the Lab
Gastrointestinal System Digestion and Elimination Gastroesophageal Reflux Disease (GERD) Nutrition and Hydration Abdominal Assessment Bowel Elimination Dysphagia Aspiration Prevention Enteral Nutrition Ostomy Care	Focused Abdominal Assessment Abdominal Inspection Abdominal Auscultation and Bowel Sounds Abdominal Palpation Techniques Identification of Normal and Abnormal Abdominal Findings Dysphagia Screening and Safety Measures Aspiration Precaution Implementation Nasogastric (NG) Tube Introduction PEG Tube Introduction Colostomy Assessment and Basic Care Enteral Feeding Equipment Gastrointestinal Case Study Application

MEDICATIONS TO KNOW – MED CARD ASSIGNMENT

Medication	System	Drug Class	Primary Use	Most Likely Diagnosis / Indication
Docusate Sodium	GI	Stool softener (laxative)	Softens stool to prevent straining and ease passage	Constipation (esp. hard/dry stools); post-op or cardiac patients to avoid straining
Senna	GI	Stimulant laxative	Promotes intestinal motility and bowel movement	Occasional constipation; short-term relief of constipation
Metoclopramide	GI	Prokinetic agent / Antiemetic	Increases GI motility and reduces nausea/vomiting	Nausea & vomiting (post-op, diabetic gastroparesis); GERD (short-term)

GASTROINTESTINAL DEVICES TO KNOW & Nurses Notes on Observation

Device	What It Is	Why It Is Used	Top 3 Things You Should Know (Fundamentals)
NG Tube (Nasogastric Tube)	Flexible plastic tube inserted through the nose, down the esophagus, into the stomach	Short-term gastric decompression (remove air/fluid), enteral feeding, medication administration, or stomach emptying	1. **Verify placement** before use (pH of gastric aspirate ≤5.5 + X-ray placement) — never use if unsure! 2. High risk for aspiration & nasal/sinus irritation; keep HOB elevated ≥30–45°. 3. Measure length (nose to earlobe to xiphoid) for insertion; secure check nostrils for skin breakdown.
Is it connected to suctioning? Is it intermittent? What does the drainage look like? What was the drainage previous shift?			
PEG Tube (Percutaneous Endoscopic Gastrostomy)	Surgically/endoscopically placed feeding tube that goes directly through the abdominal wall into the stomach	Long-term enteral nutrition, medication administration, or hydration when oral intake is not possible/safe (e.g., dysphagia, stroke)	1. **Confirm placement** by checking external markings and residual volumes; do not use if dislodged. 2. Site care is critical — clean daily, monitor for infection, redness, or leakage. 3. Usually for >4 weeks use; requires surgical/endo placement; patient may go home with it.
Is it capped. How does the dressing look Clean Dry intact? Are tube feeds running? what are they? What does the site look like?			
Colostomy	Surgically created opening (stoma) from the colon to the abdominal wall; diverts fecal matter into an external pouch	Diverts stool due to bowel cancer, trauma, obstruction, inflammatory bowel disease, or to allow bowel rest/healing	1. **Stoma assessment**: Should be pink/red, moist, and protruding slightly (like a rosebud). 2. Stool consistency depends on location (more formed with sigmoid colostomy); empty pouch when ⅓–½ full; teach skin protection to prevent breakdown. 3. Psychosocial support is huge — body image changes; refer to ostomy nurse/ support groups.
How does the stoma look? Is the colostomy device intact? How does the skin look? Does the bag need to be changed? Where is the location in the abdomen? What kind of colostomy is it?			

Unit 5 SWALLOWING ASSESSMENT

Initial Bedside Swallow Screen (Nurse-Led) Perform before any oral intake on patients with any of the following:	
High-Risk Patient Populations / Indications	**Clinical Red Flags (Subjective or Observed)**
•Acute stroke — **mandatory** per stroke protocols •New neurological changes (weakness, facial droop, slurred speech, altered mental status) •Head/neck trauma or surgery •Recent intubation / extubation >48–72 hours •Aspiration pneumonia or respiratory infections •Progressive neurological diseases (Parkinson's, ALS, MS, dementia) •Tracheostomy or tracheostomy collar •Post-operative patients (especially cardiothoracic, neurosurgery, or ENT procedures)	•Coughing, choking, or throat clearing during/after eating/drinking •Wet, gurgly, or hoarse voice after swallowing •Difficulty managing secretions (drooling, pooling) •Complaint of food "sticking" in throat or chest •Pocketing food in cheeks or prolonged chewing time •Unexplained desaturation or respiratory distress during meals •Change in mental status or inability to follow commands •Unexplained weight loss or poor oral intake with coughing/choking

Step 1: Pre-Swallow Assessment (Alertness & Oral Motor Screen)

Patient must be **alert, oriented, and able to follow simple commands**. Check **Yes/No** for each:

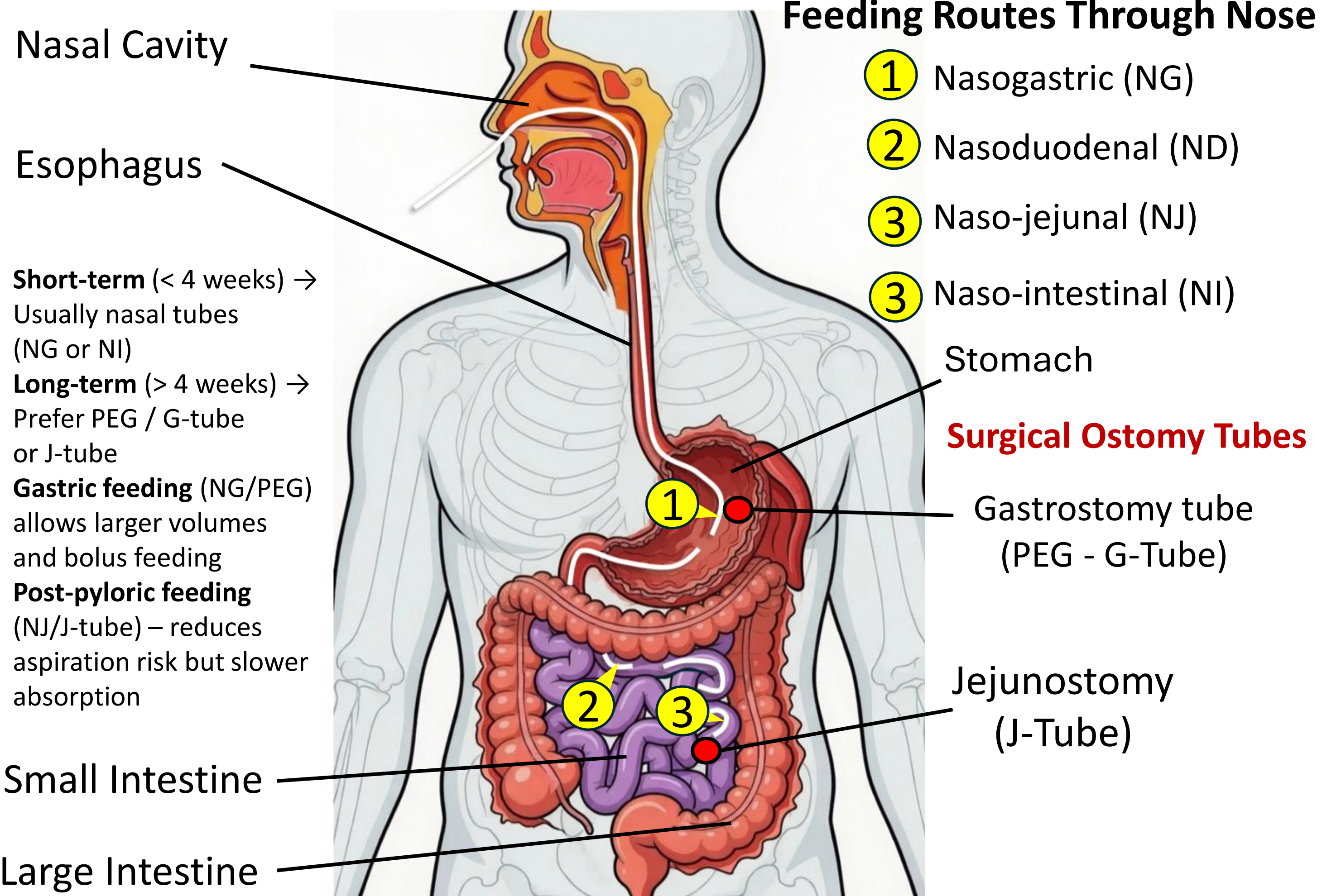
1. Is the patient alert, awake, and able to follow 1-step commands?
2. Voice is clear (no slurred, hoarse, wet, or gurgle voice)?
3. Face is symmetrical (smile, puff cheeks)?
4. Able to close lips tightly around a spoon/straw?
5. Tongue moves midline and side-to-side without weakness?
6. No excessive drooling or secretions?

If any "No" → FAIL screen. Keep NPO.

Step 2: Water Swallow Trial (if Pre-Swallow passed) Position patient upright (≥90 degrees). Give water at room temperature (no straw initially).	
Trial 1	**Trial 2 (if Trial 1 passed)**
Give 1 teaspoon (5 mL) water. Observe for 30–60 seconds. • Swallows without coughing/choking? • No wet/gurgly voice after swallow? • No drooling or throat clearing?	Give 30–60 mL(about 2–4 oz) water continuously or sips. Observe for 1–2 minutes. • No cough, choke, or wet voice? • No change in breathing or oxygen saturation? • Speaks clearly afterward?
If any signs of difficulty (cough, wet voice, desaturation, etc.) → FAIL screen.	

Step 3: Overall Result	
Fail → Keep **NPO**. Notify provider / Speech-Language Pathologist (SLP) for formal swallow study (e.g., bedside eval or videofluoroscopy). Document rationale.	**Pass** → May start oral intake (start with thickened liquids or regular diet per order). Monitor at first meal for pocketing, fatigue, or coughing.
Signs of Possible Dysphagia / Aspiration Risk •Coughing or choking during/after swallowing •Wet or gurgly voice •Food/liquid pocketing in cheeks •Recurrent pneumonia or unexplained fever •Drooling, delayed swallow, or throat clearing •Patient reports "food sticking" or difficulty swallowing	**Nursing Notes / Patient Teaching:** •Always perform before first meal or meds. •Re-screen if patient's condition changes. •Educate patient/family: "We're checking your swallow to keep you safe from choking or lung infections." •Encourage upright positioning (90°) during meals if cleared.

Unit 5 ENTERAL NUTRITION DEVICES



Tube Type	Insertion Site	Common Uses / Indications	Advantages	Disadvantages / Risks	Key Nursing Care
Nasogastric (NG) Tube	Nose → Stomach (short-term)	Short-term feeding med administration, gastric decompression	Easy to insert at bedside, removable, inexpensive	Nasal irritation, sinusitis, accidental removal, aspiration risk, discomfort	Confirm placement (pH testing/X-ray), secure well, flush q4h, check residuals, elevate HOB
Nasointestinal / Nasojejunal (NI/NJ) Tube	Nose → Jejunum (bypasses stomach)	High aspiration risk, gastric motility issues, post-upper GI surgery	Lower aspiration risk than NG	More difficult placement, requires radiology, clogging, diarrhea	Radiographic confirmation essential, do not check residuals, continuous feeding
Percutaneous Endoscopic Gastrostomy (PEG) / Gastrostomy Tube (G-tube)	Direct through abdominal wall into stomach	Long-term feeding (>4 weeks), neurological impairment, head/neck cancer	Comfortable, lower dislodgement risk, allows bolus feeding	Requires procedure, site infection, leakage, buried bumper syndrome	Clean site daily, rotate tube, check residuals, secure external bumper
Jejunostomy Tube (J-tube / PEJ)	Direct through abdominal wall into jejunum	Severe reflux, gastroparesis, pancreatic disease, high aspiration risk	Bypasses stomach, lower aspiration risk	Continuous feeding only, higher diarrhea risk, surgical placement	No residual checks, continuous slow infusion, meticulous site care
Ostomy Tubes (Low-Profile / Button)	Stomach or jejunum (button-style)	Long-term use in active patients	Less bulky, cosmetically better, easy to cap	Harder to insert meds, requires mature tract	Flush after use, skin barrier use, regular replacement every 3–6 months

Unit 5 ENTERAL NUTRITION (Tube Feeding)

Enteral nutrition is a method of providing nutrition directly into the gastrointestinal (GI) tract through a tube. It is used when a patient cannot eat enough food by mouth but their digestive system still works.

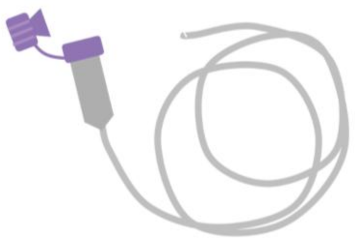
Why Use Enteral Nutrition?

•Delivers balanced nutrition (calories, protein, vitamins etc.)
•Helps maintain gut function and prevents atrophy of the intestinal lining
•Fewer complications and lower cost compared to IV nutrition (TPN)
•Supports healing, immune function, and recovery

Quick Administration & Safety Guidelines(per policy)

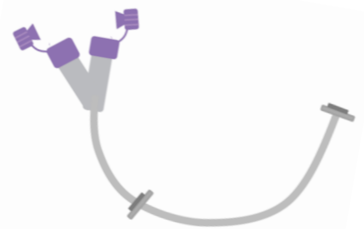
Initiation: Start low & slow (20–50 mL/hr), advance by 10–25 mL/hr every 4–8 hours as tolerated.
Gastric Residual Volume (GRV): Check q4–6h initially; hold if >250–500 mL .
Head of Bed (HOB): Keep ≥30–45° during and 30–60 min after feeding to prevent aspiration.
Tube Placement Verification: pH testing of aspirate (<5.5 gastric), X-ray confirmation for new placements.
Flushing: 30–60 mL water q4h and before/after meds to prevent clogging.
Free Water: Calculate needs (especially for hypercaloric formulas); most patients need 1 mL/kcal extra free water.
Monitoring: Daily weights, I&O, electrolytes, blood glucose, bowel sounds, abdominal girth.

INDICATIONS FOR ENTERAL FEEDINGS		
Condition / Indication	Purpose / Rationale	Common Patient Examples
Inability to ingest adequate nutrition orally	Provides complete or supplemental nutrition when swallowing is unsafe or intake is poor	Stroke, head/neck cancer, facial trauma, coma, dementia
Dysphagia (difficulty swallowing)	Prevents aspiration while meeting nutritional needs	Neurological disorders (Parkinson's, ALS), post-CVA
Anorexia or severe malnutrition	Delivers consistent calories/protein when oral intake is insufficient	Cancer, HIV/AIDS, eating disorders
Increased nutritional demands	Supports healing and recovery with higher calorie/protein needs	Burns, major trauma, sepsis, post-op (especially GI surgery)
GI tract functional but oral route not possible	Preferred over parenteral nutrition when gut can be used ("If the gut works, use it")	Mechanical ventilation, critical illness, pancreatitis (mild)
Pre-operative or post-operative nutrition	Maintains gut integrity and prevents atrophy	Major abdominal surgery, head/neck surgery

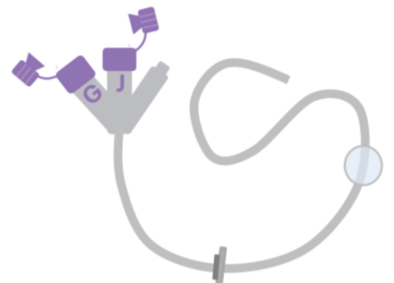


Nasal Tube

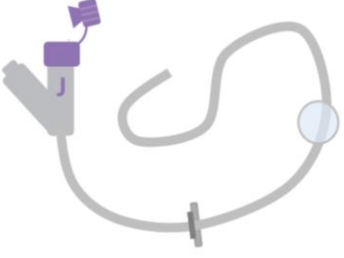
Standard Gastronomy Tube (G-Tube)



Peg Tube (PEG-Tube)



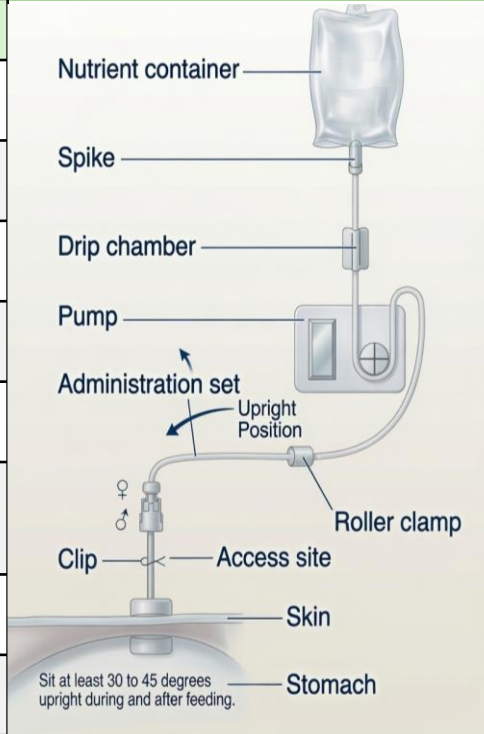
Gastrojejunostomy Tube (GJ-Tube)



Jejunostomy Tube (J-Tube)

Unit 5 ENTERAL NUTRITION (Tube Feeding)

TUBE FEEDING STEPS FEED SAFE		
F	**Flush**	Flush tube with **30–60 mL warm water** before meds, after meds, and every 4 hours. Use a 60 mL syringe.
E	**Elevate** HOB	Keep head of bed **≥30–45°** during feeding and for **30–60 minutes** after. Critical for aspiration prevention.
E	**Ensure Placement**	Aspirate gastric contents & check **pH ≤5.5** • Confirm with X-ray on new insertions • Mark tube at exit site and recheck length
D	**Determine Rate/Formula**	Start **low & slow**: 20–50 mL/hr • Advance by 10–25 mL/hr every 4–8 hours as tolerated • Use correct formula (diabetic, renal)
S	**Check Residuals**	Aspirate gastric residual volume (GRV) q4–6h initially. Hold if >250–500 mL (follow policy) Return residuals unless ordered .
A	**Assess Tolerance**	Monitor for nausea, vomiting, distension, diarrhea, cramping, or high residuals. Check lung sounds, abdominal girth, bowel sounds.
F	**Free Water**	Provide extra free water flushes (usually **1 mL per kcal** of formula). Prevents dehydration and tube clogging.
E	**Evaluate & Document**	Daily weight, I&O, electrolytes, glucose • Tolerance of feeds • Any complications or interventions • Label bag date time formula



COMPLICATIONS AND NURSING INTERVENTIONS (FOLLOW POLICY)

Complication	Common Causes	Signs & Symptoms	Prevention Strategies	Troubleshooting / Interventions
Aspiration	Decreased LOC, supine position, delayed gastric emptying, large bolus feeds	Coughing, SOB, wheezing ,fever, crackles, low O_2 sat	HOB ≥30–45°, check tube placement, use continuous pump, gastric residual checks	Stop feeding, suction airway, elevate HOB, notify provider, chest X-ray if indicated
Diarrhea	Hyperosmolar formula, rapid rate, sorbitol in meds, infection (C. diff), low fiber	>3 loose stools day, abdomen cramping	Start low rate, use fiber-formula, room-temp formula,	Hold feeds 4–8 hrs, ↓ rate, switch formula, check meds, stool studies, anti-diarrheals
Constipation	Low fiber, inadequate free water, immobility, opioids	Hard stools, abdominal distension, <3 BMs/week	Adequate free water (1 mL/kcal), fiber formula, stool softeners	Increase free water, switch to fiber formula, encourage mobility, laxatives per protocol
Tube Clogging	Inadequate flushing, crushed meds, thick formula	Resistance when flushing, no flow	Flush with 30–60 mL warm water q4h & before/after meds	Flush with warm water + gentle pressure; use pancreatic enzymes + sodium bicarb solution if needed; replace tube?
Nausea / Vomiting	Rapid rate, high volume, gastric retention, formula intolerance	Nausea, vomiting, feeling full, hiccups	Slow continuous rate, prokinetics if ordered, gastric residual checks	Hold feeding, check residuals, reduce rate or switch formula, antiemetics, small frequent feeds
Hyperglycemia	High-carb formulas, steroids, stress response, rapid advancement	Elevated blood glucose, polyuria, thirst	Use diabetic-specific formulas when appropriate, monitor glucose q4–6h	Adjust insulin per protocol, slow advancement, switch to lower-carb formula
Refeeding Syndrome	Rapid repletion in malnourished patients	↓ phos ,↓ K , ↓ Mg fluid overload, cardiac arrhythmias	Slow initiation (10–20 mL/hr), monitor electrolytes daily x 3–5 days, thiamine supplementation	Hold advancement, aggressive electrolyte replacement, slow rate, cardiology consult if arrhythmias
Abdominal Distension / Cramping	Air in tubing, rapid rate, lactose intolerance, high osmolality	Firm/distended abdomen, pain, high residuals	Prime tubing properly, slow rate advance, room-temp formula	Reduce rate, check residuals, walk patient if able, simethicone or antiflatulents
Mechanical Issues	Patient pulling tube, poor securement, (dislodgement, leakage)	Tube out of position, leaking around site	Secure with tape/bridle, frequent site checks, educate patient/family	Reassess placement, notify provider for replacement, secure properly

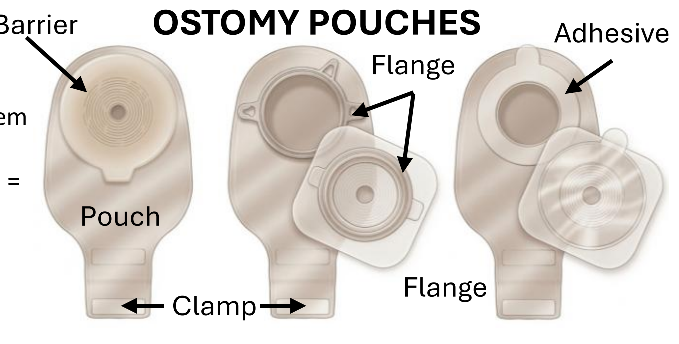
Unit 5 NUTRITION

Diet Type	Purpose	Common Medical Problems	Sample Meals / Foods Allowed	Foods Not Allowed (Restrictions)
Clear Liquid	Provides hydration and minimal nutrition while resting the GI tract; easy to digest and absorb	Post-surgery, acute GI upset, diagnostic tests (e.g., colonoscopy), nausea/vomiting	Clear broth, black coffee/tea, clear juices (apple, cranberry), plain gelatin, popsicles, clear sports drinks, strained fruit juices without pulp	Any solid food, milk/dairy, juices with pulp, carbonated beverages (sometimes restricted)
Full Liquid	Transition diet after clear liquids; provides more calories and nutrients while still liquid	Post-op recovery, difficulty chewing/swallowing, transition from NPO	All clear liquids + milk, milkshakes, ice cream, yogurt, cream soups, pudding, strained creamy soups, nutritional supplements (Ensure)	Solid foods, any food with lumps or chunks
Low Fat / Cholesterol Restricted	Reduces fat and cholesterol intake to lower risk of cardiovascular complications	Hyperlipidemia, heart disease, gallbladder disease, post-cholecystectomy	Lean meats (chicken, turkey, fish), low-fat dairy, fruits, vegetables, whole grains, egg whites	Fried foods, fatty meats (bacon, sausage), full-fat dairy, butter, egg yolks, baked goods with shortening, organ meats
Sodium Restricted	Controls fluid retention and blood pressure; typically 2,000–2,300 mg/day (or lower)	Hypertension, heart failure, kidney disease, edema, liver cirrhosis	Fresh fruits/vegetables, unsalted meats, herbs/spices instead of salt, low-sodium canned foods, rice/pasta	Processed foods, canned soups/vegetables, cured meats (ham, bacon), salty snacks (chips, pretzels), cheese, fast food, added table salt
High Fiber / Roughage	Promotes regular bowel movements, prevents constipation, supports heart health and blood sugar control	Constipation, diverticulosis (non-flare), hyperlipidemia, diabetes	Whole grains (oats, brown rice, whole wheat), fresh fruits with skin, raw vegetables, beans, legumes, nuts/seeds	Refined grains (white bread/rice), processed foods, low-fiber juices
Low Residue	Reduces fiber and residue in the intestines to minimize bowel irritation and stool volume	Inflammatory bowel disease (Crohn's/Ulcerative Colitis flare), diverticulitis flare, pre/post intestinal surgery	White bread/rice/pasta, cooked/peeled fruits & vegetables, tender meats, eggs, smooth peanut butter, canned fruits without skins	Whole grains, raw fruits/vegetables, nuts, seeds, beans, popcorn, tough meats, dried fruits
High Protein	Supports tissue repair, wound healing, and immune function; increases calorie and protein intake	Malnutrition, pressure ulcers/wounds, burns, post-surgery, cancer, HIV/AIDS	Lean meats, poultry, fish, eggs, dairy, legumes, nuts, protein supplements, Greek yogurt	Not heavily restricted; focus on increasing protein sources rather than avoiding specific foods
Kidney (Renal) Diet	Controls protein, potassium, phosphorus, sodium, and fluids to reduce kidney workload	Chronic kidney disease (CKD), acute kidney injury, dialysis patients	Low-potassium fruits/vegetables (apples, berries, cabbage), rice, pasta, limited protein (depending on stage), egg whites	High-potassium foods (bananas, oranges, potatoes, tomatoes), high-phosphorus (dairy, nuts, cola, whole grains), processed meats, salt substitutes (potassium chloride)
Low Phenylalanine	Prevents buildup of phenylalanine which can cause brain damage; special medical formula required	Phenylketonuria (PKU) – genetic metabolic disorder	Special low-phenylalanine formula, measured amounts of low-protein foods (fruits, vegetables, special low-protein breads/pasta)	High-protein foods (meat, fish, dairy, eggs, beans, nuts), regular bread/pasta, aspartame (Nutrasweet)

Unit 5 COLOSTOMY AND STOMA ASSESSMENT

1. Stoma Assessment (Look at the stoma itself)

- **Color**: Should be **pink to red** → Pale = poor circulation
- Dark purple/black = emergency (necrosis)
- **Moisture**: Should be **moist and shiny** → Dry = dehydration or problem
- **Size & Shape**: Note if swollen, shrinking, or irregular
- **Protrusion**: Should stick out ½ to 1 inch (ideal) → Flush or retracted = higher risk of leaking

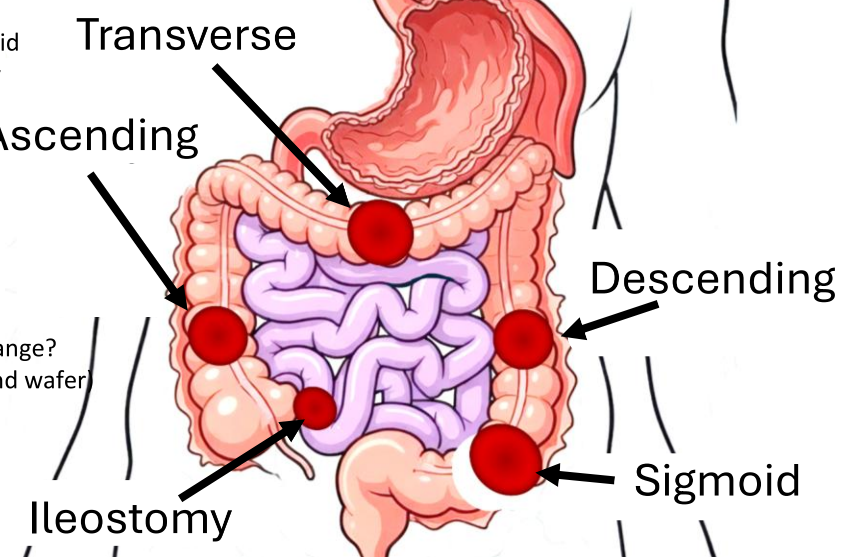


2. Peristomal Skin (Skin around the stoma)

- Should be **intact, without redness, rash, or breakdown**
- Check for irritation, maceration, or infection
- Note any leakage under the wafer

3. Output (Drainage)

- **Color**: Colostomy = brown | Ileostomy = green/yellow liquid
- **Consistency**: Matches expected output for type of ostomy
- **Amount**: Record volume
- (ileostomy – high output = dehydration risk)
- Odor: Should be typical fecal odor
- (very strong odor may indicate issue)



4. Pouch & Appliance

- Is the pouch **secure**? Any leaking?
- When was it last changed?
- Is the wafer (skin barrier) intact and not overdue for change?
- Check for proper fit (no exposed skin between stoma and wafer)

5. Patient Comfort & Psychosocial

- Pain or discomfort at site?
- How is the patient coping emotionally?
- Any concerns about odor, leakage, or body image?

COLOSTOMY TYPES AND LOCATIONS

Type	Common Indications	Stool	Complications	Nursing Considerations
Ascending	Cancer, trauma, inflammatory bowel disease	Liquid to semi-liquid	Skin irritation, fluid/electrolyte imbalance, high output	Frequent pouch changes, high fluid intake, monitor electrolytes
Transverse	Diverticulitis, cancer, bowel obstruction	Semi-liquid to pasty	Prolapse, skin breakdown, odor control issues	Larger pouch needed, odor management, protect skin
Descending	Cancer , diverticulitis, trauma	Formed to semi-formed	Constipation, blockage, hernia	May irrigate, easier management
Sigmoid	Rectal cancer, trauma, severe diverticulitis	Formed to solid	Constipation, impaction, prolapse	Can be regulated with diet/irrigation, most like normal bowel pattern
Ileostomy	Ulcerative colitis, Crohn's disease, familial polyposis	Liquid, high volume	↑ Output dehydration, skin breakdown, electrolyte loss	Pouch always needed, continuous drainage, very strict skin care

ASSESSMENT FINDINGS	Finding	Normal	Report
	Stoma color	Pink/red, moist	Pale, purple, black, dry
	Skin around stoma	Intact, healthy	Red, broken, weeping, rash
	Output (first 48 hrs)	Increasing gradually	No output, very high output
	Pain	Mild discomfort	Severe pain, sudden swelling

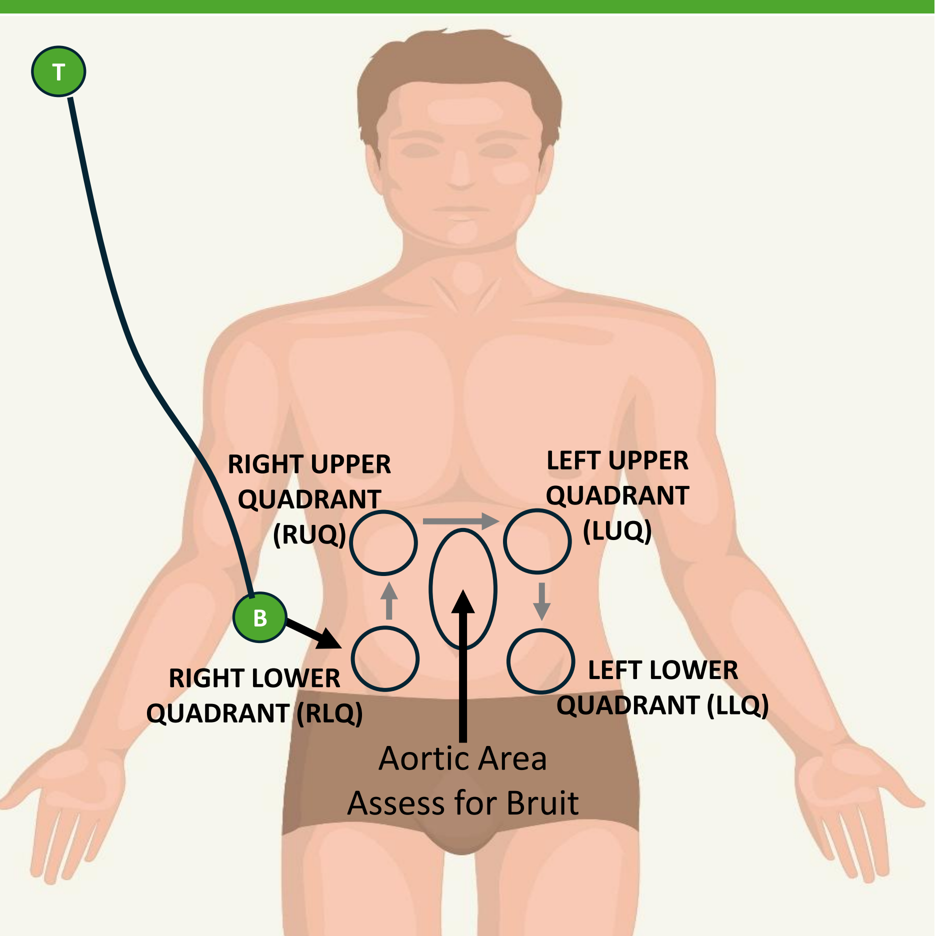
Unit 5 ABDOMINAL PRIMARY ASSESSMENT

ABDOMINAL ASSESSMENT -TB	
T	Temperature Assessment
B	Listen to bowel Sounds 4 Quadrants RLQ-RUQ-LUQ-LLQ then the Abdominal Area

Order of Abdominal Assessment:
Inspection → **Auscultation**
→ Percussion → Palpation
(always auscultate **before** palpation percussion).
Equipment: Diaphragm of stethoscope (warm it first).
Patient Position: Supine, knees slightly flexed for relaxation.
Method: Divide abdomen into 4 quadrants (RUQ, LUQ, RLQ, LLQ) or 9 regions.

- Start in RLQ (ileocecal valve area) and move clockwise.
- Listen 1–5 minutes per quadrant.
- Note frequency, pitch, and character.

Documentation Example: "Bowel sounds normoactive in all four quadrants. Abdomen soft, non-distended, non-tender."



ABDOMINAL SOUNDS AND NURSES NOTES

Bowel Sound Type	Description / Characteristics	Frequency	Clinical Significance / Possible Causes	Nursing Actions & Considerations
Normal (Active)	High-pitched, gurgling, clicking, or rushing sounds (like stomach growling)	Every 5–15 seconds (5–30 sounds per minute)	Indicates normal peristalsis and GI motility	Document as "normoactive" or "active bowel sounds present in all 4 quadrants" Continue routine monitoring
Hyperactive (Hyperperistalsis)	Loud, high-pitched, frequent, rushing, or tinkling sounds (may be audible without stethoscope)	>30 sounds per minute; almost continuous	Early intestinal obstruction, gastroenteritis, diarrhea, food intolerance, laxative use, or hunger	Assess for abdominal pain, distention, diarrhea Notify provider if accompanied by cramping or vomiting Monitor fluid/electrolyte balance
Hypoactive	Low-pitched, infrequent, sluggish sounds	Fewer than 5 sounds per minute	Late intestinal obstruction, peritonitis, post-operative ileus, opioid use, electrolyte imbalance (especially hypokalemia), immobility	Listen for full 5 minutes per quadrant before calling absent Assess for distention, nausea, constipation Encourage early ambulation; notify provider
Absent (Silent Abdomen)	No bowel sounds heard	None after listening 3–5 full minutes in each quadrant	Paralytic ileus, complete bowel obstruction, peritonitis, abdominal surgery complications, or severe inflammation	**Medical emergency** – Stop listening and notify provider immediately Keep patient NPO Prepare for NG tube, imaging, or surgical consult Do **not** palpate abdomen if obstruction suspected

Unit 6 GENITOURINARY SYSTEM

Concepts Covered	Skills In the Lab
Genitourinary System Fluid Balance Elimination Diabetes Mellitus Chronic Kidney Disease (CKD) Urinary Assessment Intake and Output Urine Characteristics Catheterization Infection Prevention Scope of Practice	Intake and Output Measurement and Documentation Urine Assessment (color, clarity, odor, amount) Urine Specimen Collection (clean catch, foley specimen, urinalysis, urine culture) Foley Catheter Catheter Care CAUTI Prevention Maintaining a Closed Drainage System Catheter Safety and Infection Control Scope of Practice Application Genitourinary Case Study Application

MEDICATIONS TO KNOW – MED CARD ASSIGNMENT

Medication	Drug Class	Primary Use	Most Likely Diagnosis / Indication
Regular Insulin	Short-acting insulin (Bolus)	Rapidly lowers blood glucose by promoting cellular uptake and storage	Type 1 or Type 2 Diabetes Mellitus • Diabetic Ketoacidosis (DKA) • Hyperglycemia • Hyperkalemia
Insulin Glargine (Lantus)	Long-acting insulin (Basal)	Provides steady, peakless background insulin coverage for 24 hours	Type 1 or Type 2 Diabetes Mellitus (basal insulin needs) • Once-daily insulin regimen
Glipizide (Glucotrol)	Sulfonylurea (Oral hypoglycemic)	Stimulates pancreas to release more insulin	Type 2 Diabetes Mellitus (oral therapy)
Dextrose 50% D50W)	Hypertonic glucose solution	Rapidly increases blood glucose level	Severe hypoglycemia (unconscious patient or no IV access alternative) Hypoglycemic emergency
Glucose Tablets	Simple carbohydrate	Quickly raises blood glucose via oral absorption	Mild to moderate hypoglycemia in **conscious** patient
Glucagon	Antihypoglycemic hormone	Stimulates liver to release stored glucose	Severe hypoglycemia (when patient is unconscious and IV access unavailable) • Beta-blocker overdose (off-label)

GENITOURNARY DEVICES TO KNOW & Nurses Notes on Observation

Device/Procedure	What It Is	Why It's Used	Three Things You Should Know
Bladder Scan	A portable, non-invasive ultrasound device that uses sound waves to measure urine volume in the bladder.	To assess post-void residual (PVR) urine, evaluate urinary retention, monitor bladder function, and help decide if catheterization is needed.	1. Perform after patient voids; normal PVR is usually <100 mL (may vary by age/guidelines). 2. Place probe midline above pubic symphysis; use correct gender/age setting for accuracy. 3. Contraindications include recent abdominal surgery, wounds, or pregnancy. Document findings and report abnormal volumes.
Foley Catheter (Indwelling Urinary Catheter)	A flexible tube inserted through the urethra into the bladder with an inflatable balloon to keep it in place; connected to a drainage bag.	To continuously drain urine in cases of urinary retention, surgery, critical illness, accurate I&O monitoring, or skin protection in incontinence.	1. Use strict sterile technique during insertion; secure catheter to prevent traction. 2. Maintain closed sterile system; keep drainage bag below bladder level to prevent reflux. 3. Monitor for CAUTI (Catheter-Associated UTI) risks; remove as soon as possible. Daily perineal care and securement are essential.

Unit 6 GENITOURINARY SPUTUM UA COLLECTION

GENITOURNARY DEVICES TO KNOW & Nurses Notes on Observation

Device/Procedure	What It Is	Why It's Used	Three Things You Should Know
Clean Catch (Clean-Catch Midstream Urine Specimen)	A method of collecting a urine sample where the patient cleans the genital area and collects the midstream portion of urine into a sterile container.	To obtain a contamination-free urine sample for urinalysis, culture & sensitivity (C&S), or other lab tests.	1. Instruct patient on proper cleaning (front-to-back for females) and to discard initial stream. 2. Best collected first thing in the morning for concentration. 3. Label specimen immediately and transport promptly to lab to avoid bacterial overgrowth.
Urinalysis (UA)	A laboratory test performed on a urine sample to evaluate physical, chemical, and microscopic properties.	To screen for urinary tract infections, kidney disease, diabetes, dehydration, liver issues, or other systemic conditions.	1. Includes color, clarity, pH, specific gravity, protein, glucose, ketones, blood, nitrites, leukocytes, and microscopic exam. 2. Fresh sample preferred; refrigerate if delay >30–60 minutes. 3. Results guide further testing (e.g., C&S if infection suspected). Report abnormal findings promptly.

Order of Blood Draw & Inversions

- Blood Cultures x 8
- Citrate x 8
- Serum x 5
- Gel/SST x 5
- Gel-Hep x 8-10
- Heparin x 8-10
- EDTA x 8-10
- EDTA x 8-10
- Fluoride x 8-10

SPUTUM COLLECTION

Obtain Specimen in Morning

Obtain Before Eating Don't Brush teeth

No Mouthwash– Rinse with Water First

Have patient Upright, Breath in through nose out through mouth—Cough

My Nursing Notes

Urinalysis

Obtained from Mid Stream or Foley Bag Usually Done before blood cultures

Urine Culture

Obtained from Clean Catch Kit, or Foley may be sent if urine dipstick is positive

DIPSTICK URINE TEST is done by dipping a plastic strip into the urine sample. This strip has partitions impregnated by different chemicals that correspond to certain substances present in the urine, so abnormalities will be detected. Once the strip is dipped into the urine, there will be some changes in the color of the partitions. The following are the chemical tests usually included in reagent strips

TESTING FOR	Reading Time	NORMAL –NEGATIVE		ABNORMAL (Strip Colors Vary Follow Policy)				
LEUKOCYTES	2 min	negative			trace	Small +	Mod ++	Large +++
NITRATES	60 sec	negative				Pos	Pos	Pos
UROBILONEGEN	60 sec	0.2	1			2	4	8
PROTEIN	60 sec	Negative	trace		30 +	100 ++	300 +++	2000 ++++
Ph	60 sec	5.0	6.0	6.5	7.0	7.5	8.0	8.5
BLOOD	60 sec	negative				Small ++	Mod ++	Large +++
SPECIFIC GRAVITY	45 sec	1.00	1.005	1.010	1.015	1.020	1.025	1.030
KETONES	40 sec	negative		Trace 5	Small 15	Mod 40	Large 80	Large 100
BILIRUBIN	30 sec	negative				Small ++	Mod ++	Large +++
GLUCOSE	30 sec	negative		100	250	500	1000	2000

GENITOURNARY DEVICES TO KNOW & Nurses Notes on Observation

Device/Procedure	What It Is	Why It's Used	Three Things You Should Know
Fasting Blood Sugar (FBS)	A lab test measuring blood glucose level after the patient has fasted (no food/drink except water) for at least 8 hours.	To diagnose or monitor diabetes, prediabetes, and evaluate glucose metabolism.	1. Normal range is typically 70–99 mg/dL (fasting). 2. Patient must be NPO (nothing by mouth) except water for 8+ hours; confirm compliance. 3. Often ordered with other labs (e.g., HbA1c); hold or notify provider for critical values (<70 or >300 mg/dL).
POC Blood Glucose (Point-of-Care / Bedside Glucose)	A rapid capillary blood test using a glucometer and test strips to measure blood sugar at the bedside.	To monitor blood glucose levels frequently in diabetic patients, during illness, post-surgery, or when on insulin/diabetes medications.	1. Use proper fingerstick technique: warm hands, avoid same site repeatedly, use side of fingertip. 2. Calibrate glucometer per facility policy; check control solutions regularly. 3. Know hypoglycemia (<70 mg/dL) and hyperglycemia protocols; document and treat per order. Always verify critical values with lab draw if required.

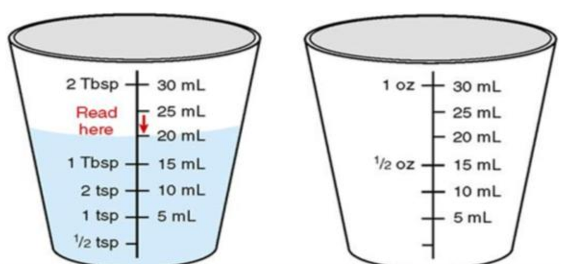
Liquid Definitions– Dysphagia Risk

Thin
Runs quickly through prongs of the fork with little or no coating– eg water, tea

Nectar
Quickly sinks through prongs of the fork with coating– eg tomato juice, milkshake

Honey
Coats fork and slowly sink through the prongs, e.g. Yogurt, honey

Pudding
Remains on the fork and hold together well e.g. mayonnaise, pudding



Bristol Stool Classification		
Type	**Description**	**Underlying**
1	Separate Hard Lumps	Very constipated
2	Lumpy & Sausage Like	Slightly constipated
3	Sausage shaped Cracks in the surface	Normal
4	Like a smooth , soft sausage or snake	Normal
5	Soft blobs with clear cut edges	Lacking Fiber
6	Mushy consistency with ragged edges	Inflammation
7	Liquid consistency with no solid pieces	Inflammation

Calculation Information
1 Ounce = 30 ml
1 Cup = 8 Ounces
1 Cup = 236.ml
1 Gallon = 128 Ounces
1 Pint = 16 Ounces
1 Tablespoon = 15 ml

Food Example	Symbol	Serving Size
Cheese stick		1 1/2 oz
Milk Yogurt		1 cup
Carrots Veggies		1 cup
Salad Bowl		2 cups
Apple Orange		1 medium
Canned Fruit		1cup
Dry Cereal Bowl		1 cup
Noodles, Rice, Oatmeal Bowl of Noodles		1/2 Cup
Slice of Whole Bread		1 slice
Chicken Beef, Fish, Pork		3 ounces
Peanut Butter		1 Tbs

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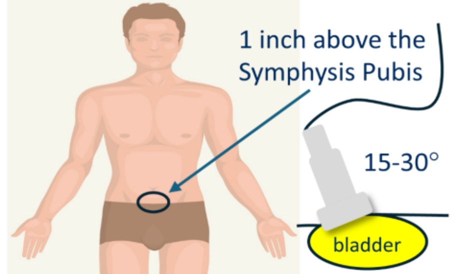
CAUTI – Catheter Associate Urinary Tract Infection – Bladder Scan - Foley

BLADDER SCAN

	Step	Nursing Action
S	Supine position	Position the patient **flat on their back** with the abdomen exposed & relaxed.
C	Confirm settings	Choose correct gender on scanner. **Use "male" setting for females with hysterectomy.**
A	Aim above pubic bone	Place scanner **1 inch above the symphysis pubis**, angled downward.
N	Note last void	Ask patient when they last urinated to determine if scan is **pre-void or post-void**.
V	Volume interpret	**<100 mL** = Normal **100–150 mL** = Borderline **>300 mL** = Likely retention> 300 → Notify provider
O	Observe Image quality	Ensure bladder is **fully visible and centered** on the screen — repeat if cutoff occurs.
I	Interpret with context	Consider conditions like **BPH, spinal cord injury, medications, mobility issues.**
D	Document Decide	Chart **volume, position, time, void status**, and whether provider notified.



The best way to prevent CAUTI is to avoid unnecessary catheters and remove them as soon as possible.

CAUTI- Catheter-Associated Urinary Tract Infection

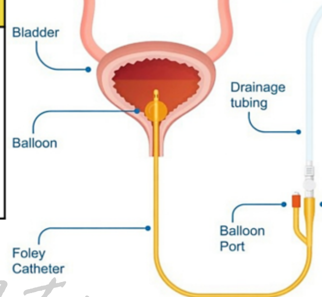
Category	Information
Definition	A urinary tract infection that develops in a patient with an indwelling urinary catheter in place for > 2 calendar days (or removed within 2 days of the infection).
Most Common Organisms	Escherichia coli (E. coli), Klebsiella, Pseudomonas, Enterococcus, Candida species
Major Risk Factors	Prolonged catheter use (> 2 days) • Female sex • Older adult • Diabetes mellitus • Immunosuppression • Poor catheter insertion or technique • Incontinence or diarrhea
Signs & Symptoms	Fever or chills • Suprapubic or flank pain/tenderness • New or worsening confusion/delirium • Cloudy, foul-smelling, or bloody urine • Increased urgency, frequency, or burning • Lethargy or sepsis
Diagnosis	Positive urine culture (> 10^3 CFU/mL) + clinical symptoms + indwelling catheter present or recently removed
Prevention Strategies (CAUTI Bundle)	1. Use catheter only when necessary 2. Use aseptic technique during insertion 3. Maintain a closed sterile drainage system 4. Keep catheter bag below bladder level 5. Daily assessment of need 6. Remove as soon as possible 7. Daily perineal hygiene with soap/water 8. Secure catheter to prevent pulling 9. Avoid routine catheter irrigation

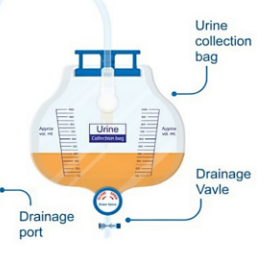
NURSING INTERVENTIONS

- Monitor for early signs of infection
- Strict hand hygiene before/after catheter care
- Document catheter insertion date and daily necessity
- Encourage fluid intake (unless contraindicated)
- Provide perineal care every shift and after bowel movements
- Report signs of infection immediately

FOLEY CATHETER INSERTION

	Step	Nursing Action
C	Confirm order & ID patient	Check physician's order and use **2 patient identifiers**. Explain procedure.
L	Level supplies position patient	Gather sterile supplies, place patient in **dorsal recumbent** (female) or **supine** (male) position.
E	Establish sterile field	Open catheter kit use **aseptic technique**. Don sterile gloves.
A	Apply antiseptic drape	Clean meatus front to back (female) or circular motion (m). Apply sterile drape.
N	No-touch technique	Handle catheter by **connector end only**; **don't touch sterile tip**.
F	Feed catheter gently	Insert catheter until **urine flows**, then **advance 1–2 inches more**.
L	Lower balloon and secure	Inflate balloon ordered amount of sterile water. Gently pull until resistance is felt.
O	Organize securement & drainage	Secure tubing to thigh and position **drainage bag below bladder** level.
W	Wash hands & document	Dispose of equipment, **wash hands**, and **document** insertion, size, tolerance, and output.





My Nursing Notes

Unit 6 GENITOURINARY SYSTEM DIABETES

NURSINGKAMP Diabetes Type 1 & Type 2 T- Treat—S-Symptoms C- Complications

Diabetes mellitus (DM), commonly known as diabetes, is a group of metabolic disorders characterized by a high blood sugar level over a prolonged period. The underlying problem is the lack of insulin production as in Type 1 or the lack of availability of active insulin metabolism in Type 2. Both require management of blood sugar through ongoing monitoring, diet modification, medications and exercise.

TYPE-1—Ketone Prone

K-Ketone Prone-S
I-Insulin Dependent-S
D-Diet Modified-T
(Young Onset)
D-Diabetes-S
I-INSULIN-T(Most Important)
N-NPH May be used
G-Glucose Monitoring

Good to Know!- DIE

D-Diet
I-INSULIN(most important)
A-Activity Level

Look For!

Hypoglycemia-Hyperglycemia
Diabetic Keto Acidosis DKA
3 p's—Polyuria, Polydipsia, Polyphagia, Weight Loss
Fruity Breath-Ketones

Type 1		Type 2
Mostly Young	Age of Onset	Mostly Adult
Abrupt	Type of Onset	Insidious
5-10%	Prevalence	90-95%
Virus, Toxins	Environmental Factors	Obesity, Lack of Exercise
Absent or Minimal	Insulin Production	Resistance or decreased
Present at onset	Islet Cell Antibodies	Absent
Absent	Endogenous Insulin	Increased then decreases
Thin, Variable	Nutritional State	Obese, Normal
Polyuria, Polydipsia, Polyphagia, Fatigue, Weight Loss	Symptoms	Recurrent Infections, Fatigue, Polyuria, Polydipsia, Polyphagia
Prone	Ketosis	Resistant
Required	Insulin	Some may require
Frequent	Vascular Neuro Probs	Frequent

Diagnostic Labs To Know

A1C level: 6.5% or higher
Fasting plasma glucose (FPG) level > 126 mg/dL
2-hour plasma glucose level during OGTT greater than 200 mg/dL (with glucose load of 75 g)

TYPE-2—Non-Ketone Prone

Sedentary
Obesity
Diet Poor
Activity Level

Good to Know! DOA

D-DIET (Most Important)
O-Oral Glycemic's
A-Activity-(Most Important)

Look For!

Hypoglycemia - Hyperglycemia
HHS- Hyperosmolar Hyperglycemia Syndrome
3 p's—Polyuria, Polydipsia, Polyphagia,

Good to Know! Type 1 - 2

Increase Aerobic Activity Level 150 minutes/week

"SICK" Day Rules!

SUGAR-Monitor every 2-3 Hours Sleep Rest

I: INSULIN-Continue to take scheduled insulin & May take more to avoid DKA

CARBS-Continue to increase intake carbs and fluids to prevent dehydration

KETONE's-Check blood and urine ketones every 4 hours take Rapid Insulin if ketones present & increase FLUIDS

My Nursing Notes

Unit 6 GENITOURINARY SYSTEM CHRONIC KIDNEY DISEASE

NURSINGKAMP Chronic Kidney Disease (CKD) Glomerular Filtration Rate (GFR)

CKD is progressive condition characterized by a gradual decline in kidney function that lasts for more than 3 months. This results in irreversible structural and functional damage to the kidneys, leading to abnormalities such as **albuminuria** (protein in the urine), **hematuria** (blood in the urine), and a permanent loss of nephrons (the kidney's filtering units). The **Glomerular Filtration Rate (GFR)** is the primary laboratory marker used to stage the severity of CKD. **Stage 5 CKD represents end-stage renal disease (ESRD),** at which point the kidneys can no longer function adequately without dialysis or transplantation. In patients with increased risk factors, a **24-hour creatinine clearance** test may be performed. The most important ongoing laboratory values are **BUN and creatinine(Cr)**; if both are elevated, CKD is diagnosed and staged. The patient then progresses through the five stages of CKD, with the primary goal being to slow disease progression.

Progressive Stages 1-5 of CKD

1. GFR ≥90 — Normal Kidney Functioning; Possible albuminuria; Usually Asymptomatic
2. GFR 60-90 — Mld decline in Functioning; Often Asymptomatic; Early Lab Abnormalities
3. GFR 30-59 — Fatigue; Change in Urination; Bilateral Edema; Mild Anemia
4. GFR 15-29 — Severe Fatigue-Anemia; Electrolyte Imbalance; Fluid Retention - Edema; High Blood Pressure
5. GFR <15 — Severe Fatigue-Anemia; Hyperkalemia, ECG Changes; Dialysis Required; Azotemic

RANKING of Risk Factors of CKD

	Cause	Pathophysiology / Key Notes
1	Diabetes Mellitus (Type 2 & 1)	Diabetic nephropathy – glomerular damage from hyperglycemia and hyperfiltration
2	Hypertension	Hypertensive nephrosclerosis – damage to renal blood vessels
3	Glomerulonephritis	Inflammation of glomeruli (post-strep, IgA nephropathy, lupus
4	Polycystic Kidney Disease	Genetic cysts enlarge and destroy kidney tissue
5	Obstructive Nephropathy	Prolonged obstruction (stones, BPH, tumors,→ hydronephrosis
6	Pyelonephritis / Chronic Infections	Repeated kidney infections causing scarring
7	Drug/Toxin-Induced	NSAIDs, aminoglycosides, contrast dye, chemotherapy, heavy metals
8	Other	Autoimmune (lupus, vasculitis), amyloidosis, HIV, hep C, congenital

Complications of CKD

C	Cardiovascular	Hypertension , Left ventricular hypertrophy, CHF, atherosclerosis, Dysrhythmias
K	Kalemia & Electrolytes	**Hyperkalemia**, Hyperphosphatemia, Hypocalcemia, Hypermagnesemia
D	Dysfunction (Fluid & Acid-Base)	Fluid overload (edema, pulmonary edema, HTN), **Metabolic acidosis** (retained acids)
H	Hematologic	Anemia (↓ EPO production), Platelet dysfunction → bleeding tendency
U	Uremic Syndrome	Uremic frost (skin), Pruritus, Nausea/vomiting, anorexia, encephalopathy (confusion, seizures)
R	Renal Bone Disease	Secondary hyperparathyroidism, Renal osteodystrophy (osteomalacia, osteoporosis), Metastatic calcification
T	Toxins / Neurologic	Uremic toxins buildup → Peripheral neuropathy, Restless leg syndrome,
S	Skin & Infection	Severe pruritus, Dry skin, Increased infection risk (immunosuppression), Poor wound healing

ONGOING MANAGEMENT OF CHRONIC KIDNEY DISEASE

C	**Control Blood Pressure**	BP goal <130/80 mmHg • First-line: **ACE Inhibitors** or **ARBs** (renoprotective) • Monitor for hyperkalemia & rising creatinine • Add diuretics as needed
K	**Kidney-Protective Diet**	Low sodium (<2g/day) • Low potassium, low phosphorus • **Controlled protein** (in later stages) • Fluid restriction if overloaded • dietitian referral
D	**Diabetes & Glycemic Control**	Tight glucose control (A1C <7% if safe) • SGLT2 inhibitors (strong kidney protection) • GLP-1 agonists (bonus CV & kidney benefit)
C	**Correct Complications**	**Anemia**: Erythropoietin (EPO) or darbepoetin + iron • **Bone disease**: Phosphate binders (sevelamer, calcium acetate), active Vitamin D (calcitriol) **Hyperkalemia**: Kayexalate, patiromer, diuretics, dietary restriction • **Acidosis**: Sodium bicarbonate
A	**Avoid Nephrotoxins**	Hold NSAIDs, contrast dye, aminoglycosides • Adjust doses for renally-cleared meds (antibiotics, digoxin) • No herbal supplements without approval
R	**Replace Function Stage 5**	**Dialysis** (hemodialysis or peritoneal) when GFR <15 or severe symptoms • **Kidney transplant** evaluation • Vascular access planning (AV fistula)
E	**Education & Lifestyle**	Daily weight monitoring, symptom reporting • Smoking cessation, exercise as tolerated • Medication adherence • flu/pneumococcal vaccines

Unit 7 INTEGUMENTARY SYSTEM

Concepts Covered	Skills In the Lab
Integumentary System Skin Integrity Pressure Injury Prevention Wound Healing Risk Factors for Skin Breakdown Skin Assessment Wound Assessment Dressings and Wound Care Braden Scale Infection Prevention	Skin Assessment Pressure Injury vs wound Braden Scale Assessment Sterile vs. Clean Technique Introduction Wound Care Equipment and Supplies Pressure Injury Prevention Strategies Repositioning Techniques

MEDICATIONS TO KNOW – MED CARD ASSIGNMENT

Med	What It Is	Why It's Used	Three Things You Should Know
Cefazolin (Ancef, Kefzol)	First-generation cephalosporin antibiotic; administered intravenously (IV) or intramuscularly (IM).	Treats or prevents bacterial infections (skin/soft tissue, urinary tract, respiratory tract, bone/joint, and surgical prophylaxis); effective against many gram-positive organisms (e.g., Staph and Strep).	1. Check for penicillin/cephalosporin allergy before administration (cross-reactivity risk). 2. Administer IV over 30 minutes; monitor for infusion reactions and signs of anaphylaxis. 3. Monitor renal function (dose adjustment may be needed); watch for C. diff diarrhea and superinfections.
Sodium Chloride 0.9% (Normal Saline, NS)	Isotonic IV crystalloid solution (0.9% NaCl in water).	Fluid volume replacement, maintenance hydration, vehicle for IV medication administration, and to flush IV lines.	1. Preferred fluid for most patients with normal sodium levels; compatible with many medications. 2. Monitor for fluid overload (especially in heart failure or renal patients); assess lung sounds and daily weights. 3. Use caution in patients with hypernatremia or edema; do not use for blood product administration (use only with blood tubing when required by policy).

WOUND ASSESSMENT

What do you see?

Location: Where is the wound?

Type: What kind of wound is it?

Wound tissue: Granulation, slough, or necrotic tissue?

Wound measurements: length, width, and depth.

Exudate: amount, color, consistency, and odor.
Dressing: Type, change Clean Dry Intact?

Assess for:

· **Maceration** (softening of tissues by soaking in fluids)

· **Tunneling** (erosion of tissue under wound edges causing (pocket beneath skin)

· **Rolled edge** (wound edges rolling over themselves causing body to think wound has healed → healing ceases prematurely)

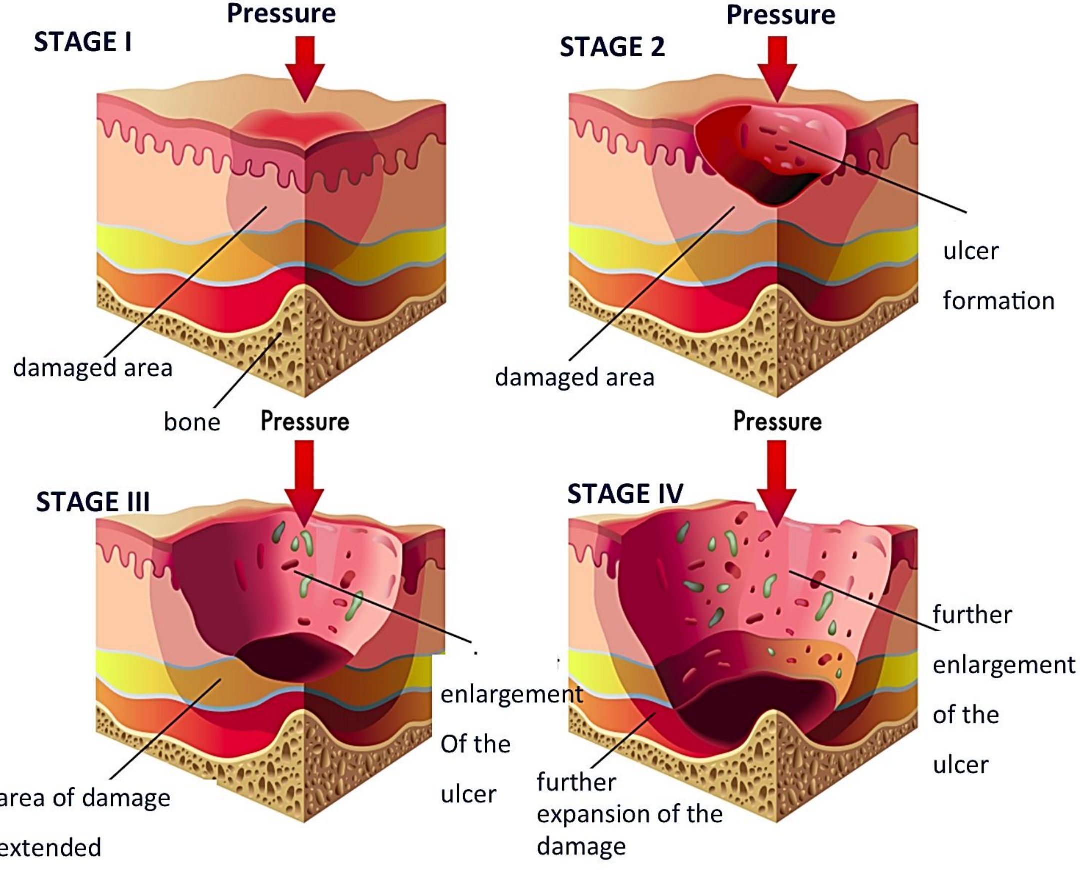
Unit 7 **INTEGUMENTARY SYSTEM**

DRESSING TECHNIQUES & TYPES

Sterile = No microbes allowed (highest level)
Clean = Fewer microbes (everyday nursing care)
Aseptic = The overall goal and mindset of keeping things free from contamination
Core Principle: The more invasive the procedure, the higher the level of technique required.

Technique	What It Is	When / Why It Is Used	Three Things You Should Know
Sterile Technique	Complete elimination of all microorganisms and spores. Uses sterile gloves, fields, and instruments.	Invasive procedures that enter sterile body cavities (e.g., surgery, central line insertion, urinary catheter insertion, wound care for open sterile wounds).	1. Maintain a sterile field — anything below waist, wet, or out of sight is considered contaminated. 2. Use sterile gloves and never touch non-sterile surfaces with sterile items. 3. If sterility is broken, stop and replace contaminated items immediately.
Clean Technique (Medical Asepsis)	Reduces the number of microorganisms but does not eliminate all of them. Uses clean gloves and non-sterile supplies.	Routine care, non-invasive procedures, and tasks involving intact skin or mucous membranes (e.g., bed baths, vital signs, emptying drainage bags, wound care for chronic wounds).	1. Focus on hand hygiene before and after care. 2. Clean to dirty direction (e.g., perineal care front to back). 3. Goal is to prevent cross-contamination between patients and body sites.
Aseptic Technique	Methods used to prevent the introduction of pathogens; a broad concept that includes both clean and sterile practices.	Any procedure where preventing infection is critical (IV medication administration, wound dressing changes, suctioning, urinary catheter care).	1. Combines hand hygiene, PPE, and environmental controls. 2. "No-touch" technique when possible for sterile sites. 3. Always perform hand hygiene and don appropriate PPE before starting.

Unit 7 INTEGUMENTARY SYSTEM PRESSURE INJURY WOUND ASSESSMENT



An unstageable pressure ulcer is characterized by full-thickness tissue loss where the base of the ulcer is obscured by non-viable tissue. This obscuring material can be slough or eschar.

Pressure Ulcer Staging

STAGE I: Non Blanchable erythema, remains red for 30 minutes after pressure has been relieved. Epidermis remains intact.

STAGE II: Epidermis is broken, lesions are superficial and there is partial– thickness skin loss

STAGE III: Full thickness skin-loss down through the dermis which may include subcutaneous tissue

STAGE IV: Full-thickness skin loss extended into supportive structures such as bone or muscle or tendons.

BRADEN SCALE RISK CATEGORIES

Total Score	Risk Level
19–23	No Risk
15–18	Mild Risk
13–14	Moderate Risk
10–12	High Risk
≤9	Very High Risk

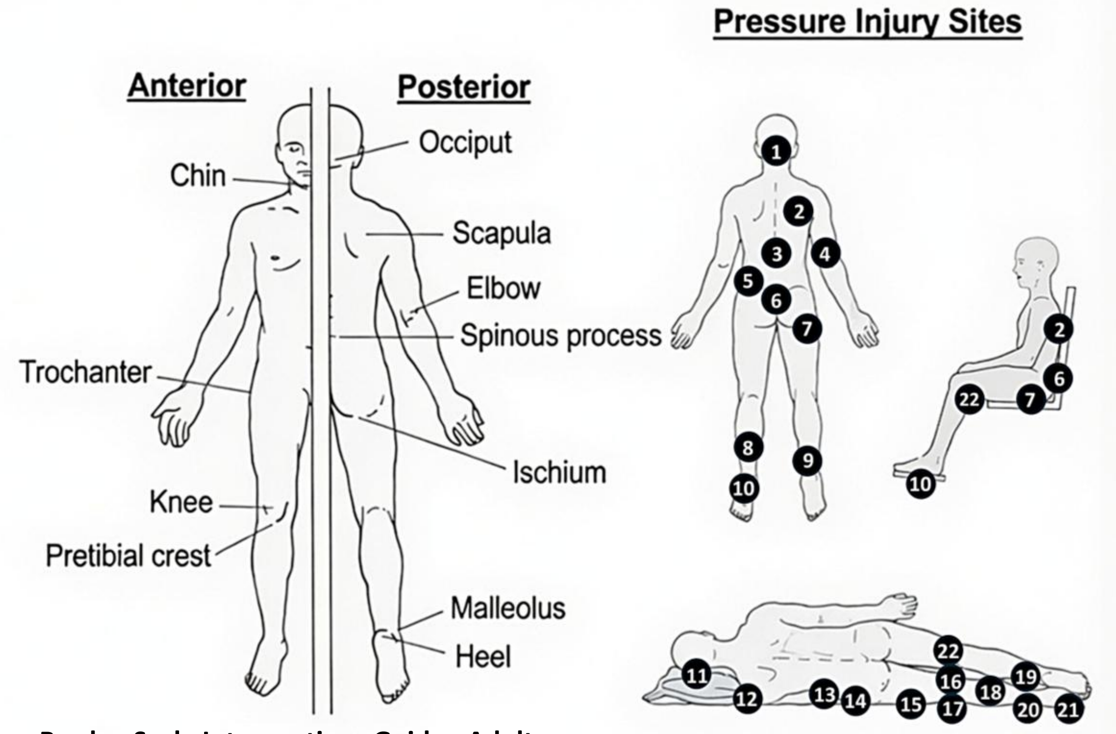
Braden Scale Interventions Guide - Adult

For those clients at risk; based on the overall Braden Scale risk assessment score & those Braden subscales which score 3 or less, use the interventions below to develop an individualized client care plan

BRADEN SCALE WOUND

Subscale	1 Point (High Risk)	2 Points	3 Points	4 Points (Low Risk)
Sensory Perception (Ability to respond to pressure-related discomfort)	Completely limited (unresponsive to pain)	Very limited (responds only to painful stimuli)	Slightly limited (responds to verbal commands)	No impairment (responds to verbal commands)
Moisture (Degree of skin exposure to moisture)	Constantly moist (incontinence, sweat)	Often moist (changed q2h or less)	Occasionally moist (changed q shift)	Rarely moist
Activity (Degree of physical activity)	Bedfast	Chairfast	Walks occasionally	Walks frequently
Mobility (Ability to change and control body position)	Completely immobile	Very limited	Slightly limited	No limitations
Nutrition (Usual food intake pattern)	Very poor (NPO, minimal intake)	Probably inadequate	Adequate	Excellent
Friction & Shear	Problem (requires moderate/max assist, slides down in bed)	Potential problem	No apparent problem	— (only 3 levels)

Unit 7 INTEGUMENTARY SYSTEM PRESSURE INJURY SITES & INTERVENTIONS



1. Occiput
2. Scapula
3. Spinous process
4. Elbow
5. Iliac crest
6. Sacrum
7. Ischial Tuberosity
8. Achilles tendon
9. Heel
10. Sole
11. Ear
12. Shoulder
13. Anterior iliac spine
14. Trochanter
15. Thigh
16. Medial knee
17. Lateral knee
18. Lower leg
19. Medial malleolus
20. Lateral malleolus
21. Lateral edge of foot
22. Posterior knee

Braden Scale Interventions Guide - Adult

For those clients at risk; based on the overall Braden Scale risk assessment score & those Braden subscales which score 3 or less, use the interventions below to develop an individualized client care plan

Standard Pressure Injury Prevention Interventions for Clients in all Risk Categories:

1. Address client concerns regarding risk of a pressure injury.
2. Determine and document risk factors associated with clinical conditions.
3. Repeat Braden Risk Assessment.
4. Repeat the Head-to-Toe skin assessment.
5. Manage and provide pain relief.
6. Provide skin care
7. Prevent/manage moisture associated skin damage e.g., toileting routine to manage urine/feces Avoid continence briefs/pads.
8. Promote activity/mobility.
9. Support nutritional therapy e g encourage calorie and fluid intake as per client condition.
10. Reduce/eliminate shear & friction e.g. keep head of bed (HOB) less than 30° unless for meal time or as per client condition.
11. Alleviate pressure e.g. protect heels and elbows elevate heels off the bed
12. Promote pressure redistribution through positioning/repositioning e.g., turn/reposition as per clients individualized care plan. (e.g. q2h; q3h; q4h), and include small shifts of position.
13. For clients with subscales scores of 2 or less, make referral(s) to appropriate HCPs & consider additional interventions.

BRADEN SCALE RISK CATEGORIES

Total Score	Risk Level	Recommended Interventions
19–23	No Risk	Routine prevention
15–18	Mild Risk	Frequent turning, support surfaces
13–14	Moderate Risk	Enhanced prevention protocol
10–12	High Risk	Specialty mattress, strict repositioning
≤9	Very High Risk	Aggressive multidisciplinary interventions

Unit 8 MUSCLESKELETAL SYSTEM

Concepts Covered	Skills In the Lab
Musculoskeletal System Mobility Fall Prevention Body Mechanics Patient Positioning Assistive Devices Parkinson's Disease Multiple Sclerosis (MS) Amyotrophic Lateral Sclerosis Range of Motion Safe Patient Handling	Mobility Assessment Use of a Gait Belt Ambulation Assistance Transfer Techniques Cane, Walker, Crutch Use Turning and Repositioning Patients Range of Motion Exercises Patient Positioning: (High, Low Semi Fowler's, Supine, Prone, Lateral) Fall Prevention Strategies Safe Patient Handling Techniques

MEDICATIONS TO KNOW – MED CARD ASSIGNMENT

Medication	What It Is	Why It's Used	Three Things You Should Know
Celecoxib (Celebrex)	COX-2 selective NSAID (Non-Steroidal Anti-Inflammatory Drug);	Management of pain and inflammation from osteoarthritis, rheumatoid arthritis, ankylosing spondylitis, acute pain, and menstrual cramps. Often used when a lower risk of stomach irritation is desired compared to traditional NSAIDs.	**1. Black Box Warning**: Increased risk of cardiovascular events (heart attack, stroke) and gastrointestinal bleeding. Use lowest effective dose for shortest time. 2. Contraindicated in patients with sulfa allergy (contains sulfonamide) and history of asthma, urticaria, or allergic reaction to aspirin/NSAIDs. 3. Monitor for GI bleeding, renal function (especially in elderly/dehydrated patients), and heart failure symptoms. Take with food to reduce stomach upset.

MUSCLESKELETAL MOBILITY DEVICES

Device	What It Is	Why It's Used	Three Things You Should Know
Gait Belt	A sturdy belt placed around the patient's waist with handles for the caregiver.	Provides a safe grip point for assisting with ambulation, transfers, and balance support.	1. Always apply snugly over clothing (not bare skin). 2. Use proper body mechanics — grasp handles, not the belt itself. 3. Contraindicated in recent abdominal surgery, G-tube, or rib fractures.
Cane	Single-point or quad-point (four legs) walking aid held in the hand.	Improves balance and support for patients with mild weakness, arthritis, or injury on one side.	1. Hold cane on the **strong** side. 2. Advance cane and weak leg together. 3. Proper height: handle at wrist level when standing with arm relaxed.
Crutches	Axillary (underarm) or forearm (Lofstrand) crutches.	Used for non-weight bearing or partial weight bearing after lower extremity injury/surgery.	**1. Crutch gait** depends on weight-bearing status (e.g., 3-point, 4-point, swing-through). 2. Two-finger space between axilla and crutch top to prevent nerve damage. 3. Teach "down with the bad, up with the good" when going up/down stairs.
Walker	Four-legged frame (standard, rolling/wheeled, or hemi-walker).	Provides maximum stability for patients with poor balance, weakness in both legs, or after surgery.	1. Pick up and advance walker, then step (standard); roll and step (rolling walker). 2. Ensure all legs contact floor evenly. 3. Do not lean or hang on walker — use for support only.
Wheelchair	Manual or powered chair for seated mobility.	Used when patient cannot safely ambulate or needs extended mobility/transport.	1. Lock brakes before transfers; footrests up when transferring. 2. Position patient properly with pressure relief cushions 2. Know weight capacity and proper pushing technique from behind.
Mechanical Lift (Hoyer Lift / Sling Lift)	Powered or hydraulic lift with sling for full patient transfers.	Safely transfers dependent or heavy patients between bed, chair, toilet, or stretcher.	1. Use correct size sling and check patient weight limit. 2. Never leave patient suspended in sling. 3. Requires **two caregivers** for safety in most facilities.

Unit 8 MUSCLESKELETAL SYSTEM

GAIT BELT	CANE	CRUTCHES	WALKER	WHEELCHAIR	MECHANICAL LIFT
GRIP	**COAL**	**CRUTCH**	**WALK**	**BRAKES**	**SLING2**
GRASP the handles (never the belt itself) **REMEMBER** to apply snugly over clothing **INVOLVE** patient and explain the plan **PROPER** body mechanics – feet apart, knees bent	**CANE** held on the **OPPOSITE** (strong) side **ADVANCE** cane and weak leg together **LOOK** straight ahead for balance **CANE OPPOSITE THE AFFECTED LEG** **MEASURE** **1.Turn the cane upside down and put handle on floor** **2.Stand with arms at your sides** **3. The tip of the cane should be at your wrist**	**CHECK**2-finger space under axilla **REMEMBER** weight-bearing status **UP** with the good leg, **DOWN** with the bad (stairs) **TRIPOD** stance when standing **CARRY** nothing while using crutches **HANDS** on handgrips only **MEASURE** **Have patient stand relaxed with shoes** **TOP PAD** 2–3 finger widths (about 1–2 inches or 3–5 cm UNDER AXILAR **HANDGRIP** Elbows should bend 20-30 degrees	**W**ait until all legs are firmly planted **ADVANCE** walker first **LOOK** forward, not down at your feet **KEEP** small steps inside the walker frame	**BRAKES** locked before any transfer **REMOVE** or swing away footrests **ASSIST** from the patient's strong side **KEEP** wheelchair locked against bed or wall **EYES** on patient's feet during transfer **SECURE** with seatbelt if needed	**SELECT** correct sling size and type **LOWER** bed and lock all brakes **IINSPECT** all hooks and connections **NEVER** leave patient suspended in air **GET2** a second caregiver for safety

Selecting the Appropriate Gait Pattern : When assessing which **gait** to use with crutches or a cane, first ask: **"Is this an odd-numbered (one-sided) or even-numbered (bilateral) problem?"**

Rule of Thumb:

Odd = One-sided injury or weakness → Use an **odd-point gait** (most commonly the **3-point gait**).
Example: Patient with a **broken leg**, recent hip/knee surgery, or non-weight-bearing status on one lower extremity.
Even = Bilateral (both sides) involvement → Use an **even-point gait** (2-point or 4-point gait).
Examples: Rheumatoid arthritis, multiple sclerosis (MS), generalized lower extremity weakness, or Parkinson's disease.

2 POINT GAIT	3 POINT GAIT	4 POINT GATE	SWING THROUGH
R **Crutch** + L **Foot** then L **Crutch** + R **Foot**	**Both crutches** forward w/ **weak** leg then **strong** leg forward	Resembles *"Normal Walking"* L **Crutch** then R **Foot** R **Crutch** then L **Foot**	**Both crutches** forward then **both legs** swing forward
R R R L L	R L L L	R L L R R	L R L R

Unit 8

MUSCLESKELETAL SYSTEM

01 SUPINE (RECUMBENT)

LYING FLAT ON THE BACK

USES:

- GENERAL EXAMINATION
- REST AND SLEEP
- POST-SURGERY

02 HIGH FOWLER'S POSITION

SITTING COMPLETELY UPRIGHT AT 90 DEGREES

ELEVATED 45°-90°

USES:

- BREATHING DIFFICULTY
- POST-SURGERY
- EATING AND READING

03 SEMI-FOWLER'S POSITION

HEAD ELEVATED ABOUT 30°-45°

USES:

- MILD BREATHING DIFFICULTY
- REST AND COMFORT
- REDUCES PRESSURE ON ABDOMEN

04 PRONE POSITION

LYING FLAT ON THE ABDOMEN

USES:

- RELIEVES PRESSURE ON BACK
- PROMOTES LUNG EXPANSION
- POST-SPINAL PROCEDURES

05 LATERAL POSITION

LYING ON THE SIDE

USES:

- UNCONSCIOUS PATIENTS
- PREVENTS BED SORES
- REST AND DRAINAGE

06 SIMS' POSITION

LYING ON LEFT SIDE, LEFT ARM UNDER HEAD, RIGHT KNEE FLEXED

USES:

- ENEMA ADMINISTRATION
- RECTAL EXAMINATION
- UNCONSCIOUS PATIENTS

07 TRENDELENBURG POSITION

LYING ON BACK WITH LEGS ELEVATED HIGHER THAN THE HEAD

USES:

- SHOCK
- LOW BLOOD PRESSURE
- IMPROVE BLOOD FLOW TO VITAL ORGANS

08 LITHOTOMY POSITION

LYING ON BACK WITH HIPS & KNEES FLEXED, LEGS APART

USES:

- GYNECOLOGICAL EXAMINATION
- CHILD BIRTH
- SURGICAL PROCEDURES

09 ORTHOPNEIC POSITION

SITTING UP, LEANING FORWARD WITH ARMS SUPPORTED

USES:

- SEVERE BREATHING DIFFICULTY
- HEART FAILURE
- EASIER LUNG EXPANSION

Unit 8 MUSCLESKELETAL SYSTEM

NURSINGKAMP Multiple Sclerosis(MS), Parkinson's Disease (PD), Amyotrophic Lateral Sclerosis (ALS)

MS, ALS and Parkinsons are neurodegenerative or neuroinflammatory conditions with some overlapping motor symptoms (e.g., weakness, gait issues), but distinct underlying mechanisms, courses, and outcomes. Diagnosis requires clinical evaluation, imaging (MRI), EMG for ALS

Multiple Sclerosis (MS)	Parkinson's Disease (PD)	Amyotrophic Lateral Sclerosis (ALS)
MS is primarily **autoimmune/demyelinating** with relapsing course, sensory + motor symptoms, and better long-term survival	**Parkinson's** is a **movement disorder** driven by dopamine loss, featuring tremor/rigidity/bradykinesia, slow progression.	**ALS** is a **motor neuron disease** causing rapid muscle wasting and paralysis, with the worst prognosis among the three
MSVISUAL (WEAK) – LOOKS LIKE	**SHUFFLE MASK TRAP**	**ALS WEAK**
MUSCLE weakness / spasticity **SENSORY** changes (numbness, tingling, pain) **VISION** problems (optic neuritis, blurred/double vision) **INTENTION** tremor / Incoordination (ataxia) **SPACITY**/ Stiffness **URINARY**/ bowel issues **AUTOIMMUNE** fatigue (extreme tiredness) **LIMB** weakness	**SHUFFLE** –shuffling gait **MASK** – mask like face **TREMOR** (resting/pill-rolling) **RIGIDITY** (stiff muscles) **AKINESIA**/ Bradykinesia (slowness of movement) **POSTURAL** instability (balance problems, falls)	**ATROPHY** (muscle wasting) **LOSS** of strength (progressive weakness) **SPEECH** & Swallowing difficulties (dysarthria, dysphagia) **WALKING** problems (foot drop, tripping) **EXAGERRATED** reflexes / spasticity (upper motor neuron signs) **KICKING** muscle twitching fasciculations

Aspect	Multiple Sclerosis (MS)	Parkinson's Disease (PD)	Amyotrophic Lateral Sclerosis (ALS)
Primary Pathology	Autoimmune; immune system attacks myelin sheath in CNS (brain, spinal cord, optic nerves)	Degeneration of dopamine-producing neurons in substantia nigra (basal ganglia)	Degeneration of motor neurons in brain and spinal cord (upper and lower motor neurons)
Affected System	Central Nervous System (CNS)	Central Nervous System (CNS)	Motor neurons (CNS to peripheral muscles)
Typical Age of Onset	20–50 years (often younger adults)	Usually 60+ (can start earlier)	40–70 years (peak 55–75)
Gender Predominance	More common in women (2–3x)	Slightly more common in men	Slightly more common in men
Progression	Unpredictable; relapses/remissions common; can be progressive	Slow, gradual worsening over years/decades	Rapid progression; usually fatal within 3–5 years (10% live 10+ years)
Prognosis	Normal or near-normal lifespan; managed long-term	Chronic, progressive but not usually fatal; lifespan often near normal	Fatal; death usually from respiratory failure
Causes/Risk Factors	Autoimmune/genetic + environmental (e.g., latitude, vitamin D, smoking)	Mostly idiopathic; genetic in some cases; age primary risk	Mostly sporadic (90%); 10% familial/genetic; age, male sex, military service
Key Treatments	Disease-modifying therapies (DMTs), steroids for flares, symptom management (physical therapy, meds for spasticity/fatigue)	Levodopa/carbidopa, dopamine agonists, DBS surgery, exercise, therapy	Riluzole, edaravone, symptom management (respiratory support, feeding tube, physical/speech therapy); no cure
Cognitive Impact	Common (memory, concentration issues)	Common later (dementia in some)	Usually spared
Sensory Symptoms	Prominent (numbness, pain, vision loss)	Minimal	Rare (primarily motor)

Unit 9 NEUROLOGICAL SYSTEM

Concepts Covered	Skills In the Lab
Neurological System Level of Consciousness (LOC) Cerebrovascular Accident (CVA/Stroke) Dementia Delirium Neurological Assessment Cranial Nerves Sensory and Motor Function Neurovascular Assessment Cognitive Function	Neurological Assessment Level of Consciousness Assessment Glasgow Coma Scale Introduction Cranial Nerve Assessment Motor Function Assessment Sensory Function Assessment Neurovascular Assessment Assessment of the 6 Ps (pain, pallor, pulselessness, paresthesia, paralysis) Recognition of Stroke Symptoms Neurological Cas

MEDICATIONS TO KNOW – MED CARD ASSIGNMENT

Medication	What it is	Why it is used	3 Key Things to Know (for Fundamentals)
Donepezil (Aricept)	Acetylcholinesterase inhibitor (cholinergic drug)	Treats mild to moderate Alzheimer's dementia to improve memory, thinking, and daily function.	1. Increases acetylcholine in the brain to help cognition. 2. Give with food to ↓ GI upset (nausea/diarrhea common); often at bedtime. 3. Monitor for bradycardia, GI bleeding risk, and liver enzymes.
Zolpidem (Ambien)	Non-benzodiazepine sedative-hypnotic	Short-term treatment of insomnia (helps fall/stay asleep).	1. Take **right before bedtime** with 7–8 hours available for sleep. 2. Risk of next-day drowsiness, falls, and complex sleep behaviors (e.g., sleep-driving). 3. Avoid with alcohol or other CNS depressants; short-term use only (7–10 days).
Hydromorphone HCl (Dilaudid)	Potent opioid agonist (Schedule II)	Moderate to severe pain relief (acute or chronic).	1. **Monitor respirations closely** — can cause life-threatening respiratory depression. 2. Common side effects: sedation, constipation (use bowel regimen), nausea. 3. Naloxone is the antidote; assess pain before/after and watch for dependence.
Hydrocodone/Acetaminophen (Vicodin, Norco)	Opioid agonist + non-opioid analgesic (Schedule II)	Moderate to severe pain (often post-op or injury).	1. Watch total acetaminophen dose (≤4 g/day) to prevent liver damage. 2. Causes respiratory depression, sedation, and constipation like other opioids. 3. Naloxone for overdose; educate on no alcohol and safe storage.
Morphine Sulfate	Opioid agonist (Schedule II)	Moderate to severe pain (post-op, cancer, MI, palliative care).	1. **Primary risk = respiratory depression** — monitor rate and depth frequently. 2. Causes constipation (prevent with stool softeners), sedation, and hypotension. 3. Have naloxone ready; reassess pain and vital signs; multiple routes available.
Naloxone (Narcan)	Opioid antagonist (reversal agent)	Emergency reversal of opioid overdose (respiratory depression).	1. Acts quickly (minutes) but wears off fast — may need repeat doses or infusion. 2. Can cause sudden opioid withdrawal symptoms (agitation, vomiting, tachycardia). 3. Give IV/IM/IN; always call emergency services; monitor patient closely afterward.

Unit 9 NEUROLOGICAL ASSESSMENT

NURSINGKAMP Cerebral Vascular Accident (CVA) "Stroke" Right VS Left Sided Stroke

A **Cerebrovascular Accident (CVA)**, commonly called a **stroke**, is a **sudden interruption** of blood flow to part of the brain. Brain cells die when they don't get oxygen and nutrients, leading to sudden neurological deficits. There are two types of CVA's **ischemic (87%)** where a clot blocks the blood vessel in the brain where a patient can receive TPA(clot buster) if within the time frame(4 hours of incident) lending to the term **"Time is Brain"** – The faster blood flow is restored, the better the outcome. The second type **hemmorhagic** (13%) this is where the blood vessel in the brain ruptures resulting in bleeding this is often more deadly; caused by hypertension, aneurysm, or AVM. These result in residual damage of the brain and cranial nerves presenting with characteristic symptoms either terms "RIGHT" or "LEFT" sided strokes.

Left Hemisphere Stroke

(affects **right** side of body)

RIGHT Weak LEFT BROCA

R – **Right**-sided weakness / hemiparesis (contralateral motor deficit)

I – **Intellectual** / language deficits (aphasia – expressive or receptive)

G – **Gaze** preference (toward lesion side)

H – **Hemiplegia** on the right side + right-sided sensory loss

T – **Thinking** / logical processing impaired (math, sequencing, reading/writing difficulties)

L – **Language** problems (aphasia – Broca's or Wernicke's)

E – **Emotional** lability or frustration (especially with communication)

F – **Face** droop + right-sided facial weakness

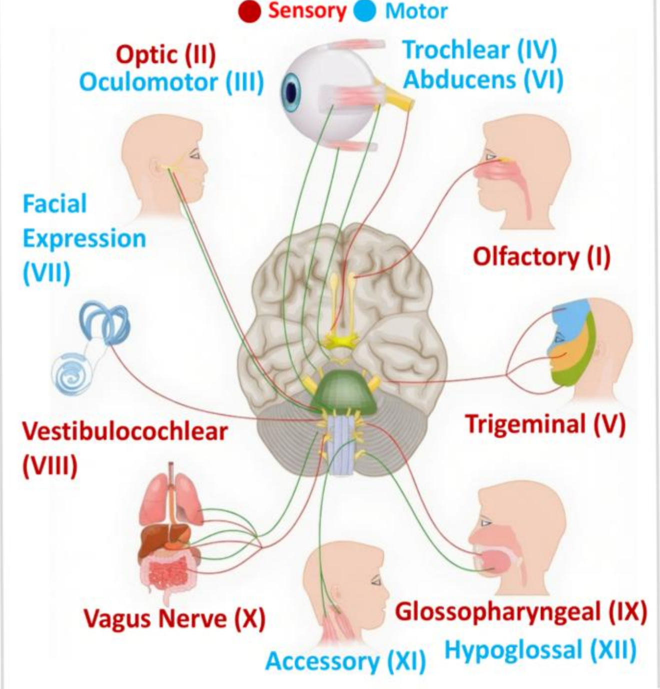
T – **Thinking** / cognitive deficits (right-sided neglect is rare; math/analytical issues)

LEFT SIDED CVA LANGUAGE DEFECITS

Wernicke's = Wacky words, Won't understand You-Safety risk! Use gestures, pictures, demonstrate tasks. Avoid complex explanations.

Broca's = Bad Behavior of speech (non-fluent) but Brain understands Patient is frustrated but can often follow commands → Use simple yes/no questions, give extra time, written cues.

B	E	F	A	S	T
BALANCE Unsteady Dizziness	EYES Sudden loss of vision or blurred	FACE Facial Drooping	ARM Limb leg weakness	SPEECH Slurred Unclear	TIME Call EMS 911 NOW



Right Hemisphere Stroke

(affects **left** side of body)

"LEFT Neglect"

L – **Left**-sided weakness / hemiparesis (contralateral motor deficit)

E – **Eyes** / visual-spatial depth perception deficits, homonymous hemianopsia,

F – **Face** recognition problems / prosopagnosia (difficulty recognizing familiar faces)

T – **Tone** / impulsivity (poor judgment, safety awareness issues, "left brain is logical, right brain is creative/impulsive")

N – **Neglect** (unilateral neglect / hemi-inattention – ignores left side of body/space)

E – **Emotional lability** or flat affect

G – **Gait** / balance problems (ataxia, falls risk)

L – **Loss** of proprioception / spatial awareness

E – **Expressive** deficits in non-verbal communication

C – **Creative** side affected (artistic, holistic thinking impaired)

T – **Time** disorientation

LEFT SIDED INTELECTUAL DEFECITS

Receptive Aphasia:

•They **do NOT understand** → Speak slowly and use very simple words.

Expressive Aphasia:

They **understand** most of what you say → Use simple yes/no questions.

My Nursing Notes

Unit 9 NEUROLOGICAL ASSESSMENT

Concepts Covered

What is LOC?
Level of Consciousness refers to a patient's **awareness of self and environment**. It is one of the most important neurological assessments a nurse performs. Changes in LOC are often the **earliest sign** of neurological deterioration (before vital sign changes).

Why It Matters in Fundamentals
Early detection of decline (e.g., stroke, head injury, overdose, hypoxia, hypoglycemia, infection).
Required in every head-to-toe assessment, especially in ER, ICU, neuro, and post-op patients.
Part of the **AVPU** and **Glasgow Coma Scale (GCS)** tools.

AVPU Scale (Quick, first-line screen — use this first)

- **A**lert — Patient is awake, eyes open, responds appropriately without stimulation.
- **V**oice — Responds to verbal stimuli (e.g., answers questions, follows commands).
- **P**ain — Responds only to painful stimuli (e.g., sternal rub, nail bed pressure).
- **U**nresponsive — No response to voice or pai

Detailed Descriptors (Document exactly what you see)
Alert & Oriented ×3 (A&O×3):
Oriented to **Person**, **Place**, and **Time**.
A&O×4: Also oriented to **Situation** (why they are here).
Confused: Disoriented but follows simple commands.
Lethargic / Somnolent: Drowsy but arousable to voice; falls back asleep easily.
Obtunded: Requires repeated stimulation; slow, confused responses.
Stuporous: Only responds to painful stimuli; minimal response.
Comatose: Unresponsive to any stimuli.

GCS (Glasgow Coma Scale)

Best Eye Response (E)

4	Spontaneous
3	On Command
2	To Pain
1	No Response

PERRLA

Pupils
Equal
Round
Reactive
Light
Accommodation

2mm
4mm

Best Verbal Response: (V)

5	Alert and Oriented
4	Confused
3	Inappropriate
2	Incomprehensible
1	No Response

Best Motor Response: (M)

6	Follows Direction
5	Localizes Pain
4	Withdraws from Pain
3	Abnormal Flexion
2	Abnormal Extension
1	No Response

GCS= 15 Normal GCS < 8 Intubate?
GCS <7 Coma?

See disclaimer on nursingkamp.com

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My Nursing Notes

Unit 9 NEUROLOGICAL CRANIAL NERVE ASSESSMENT STROKE

B

BALANCE

The person has sudden dizziness or loss of coordination

E

EYES

A sudden loss of vision in one, or both eyes, or double vision, occurs

F

FACE

Ask the person to smile.

Is the smile lopsided?

A

ARM

Ask the person to raise both arms.

Can they keep them there?

S

SPEECH

Ask the person to repeat a simple sentence.

Is it hard to understand?

T

TIME

If any of these symptoms exist, call 911

CRANIAL NERVE ASSMENT

#	Cranial Nerve	Type	Primary Function	How to Assess (Fundamental Level)	Expected Normal Finding
I	**Olfactory**	Sens	Sense of smell	Ask patient to close eyes. Occlude one nostril. Present familiar, non-irritating odors (coffee, vanilla, peppermint, soap). Repeat on other side.	Correctly identifies odor in each nostril
II	**Optic**	Sens	Vision	Test distance visual acuity (Snellen chart) or near vision card. Assess visual fields by confrontation.	20/20 or best corrected vision; full visual fields
III	**Oculomotor**	Mot	Most eye movements, pupil constriction, eyelid elevation	Assess **PERRLA**. Check for ptosis. Test extraocular movements (EOMs) in 6 cardinal positions of gaze.	Pupils equal, round, reactive to light & accommodation (PERRLA); no ptosis; smooth full EOMs
IV	**Trochlear**	Mot	Downward & inward eye movement	Tested during EOM assessment (look down and in)	Smooth downward and inward eye movement
V	**Trigeminal**	Mix	Sensation to face (3 divisions), chewing	Light touch to forehead, cheek, and jaw (V1, V2, V3). Ask patient to clench teeth firmly.	Sensation intact in all 3 divisions; strong bilateral jaw clench
VI	**Abducens**	Mot	Lateral eye movement (abduction)	Tested during EOM assessment (look laterally)	Smooth lateral (abduction) eye movement
VII	**Facial**	Mix	Facial expression, taste (anterior 2/3 tongue)	Ask patient to: raise eyebrows, close eyes tightly, smile, frown, puff out cheeks	Symmetric facial movements and expression
VIII	**Vestibulococ hlear**	Sens	Hearing and balance	Whisper test or finger rub test bilaterally. Observe gait and balance.	Hears whisper/finger rub equally in both ears
IX	**Glossophary ngeal**	Mix	Taste (posterior 1/3), swallowing, gag reflex	Assess gag reflex (gently touch posterior pharynx). Ask patient to say “ahh”.	Gag reflex present; uvula rises symmetrically
X	**Vagus**	Mix	Swallowing, speech, parasympathetic function	Assess voice quality, swallowing, and uvula movement (often tested with IX)	Clear voice, no hoarseness; symmetric palate/uvula
XI	**Accessory (Spinal)**	Mot	Head turning and shoulder shrug	Ask patient to shrug shoulders against resistance. Turn head side-to-side against resistance.	Strong, symmetric shoulder shrug and head turning
XII	**Hypoglossal**	Mot	Tongue movement and speech	Ask patient to stick out tongue and move it side to side. Listen to lingual speech sounds.	Tongue protrudes in midline; moves symmetrically

Unit 9 NEUROLOGICAL EXAMS MMSE and MINI-COG

MMSE- MINI MENTAL STATUS EXAM

Category	Task	Points	Instructions / Example Questions
Orientation	Time (year, season, date, day, month)	5	"What is the year/season/date/day/month?"
Orientation	Place (state, county, town, hospital, floor)	5	"Where are we? (state, county, town, hospital, floor)"
Registration	Repeat 3 words (e.g., apple, table, penny)	3	Name 3 unrelated objects. Score 1 point per correct repetition.
Attention & Calculation	Serial 7s (subtract 7 from 100, 5 times) **OR** Spell "WORLD" backwards	5	"Subtract 7 from 100" (93, 86, 79, 72, 65). Alternative: spell "WORLD" backwards.
Recall	Recall the 3 words from registration	3	"What were the 3 words I asked you to remember?"
Language – Naming	Name 2 objects (e.g., pencil, watch)	2	Point to objects and ask to name them.
Language – Repetition	Repeat a complex sentence	1	"No ifs, ands, or buts."
Language – 3-Stage Command	Follow a 3-step command	3	"Take this paper in your right hand, fold it in half, and put it on the floor."
Language – Reading	Read and obey a written command	1	"Close your eyes" (written).
Language – Writing	Write a complete sentence	1	"Write a sentence about anything."
Visuospatial	Copy intersecting pentagons (or design)	1	Show figure and ask patient to copy it.

MMSE: Folstein et al. (1975). Mini-Mental State Examination. Copyright held by MiniMental LLC / PAR

Scoring Interpretation

•**24–30**: Normal range (may vary with age/education)
•**19–23**: Mild cognitive impairment
•**10–18**: Moderate cognitive impairment
•**<10**: Severe cognitive impairment

MINI COG – MINI COGNITIVE SCREENING TOOL 0-5 POINTS

Step	Task	Points	Instructions
Word Registration	Repeat 3 unrelated words (e.g., **banana, sunrise, chair**)	(Scored later)	Say the 3 words clearly. Ask patient to repeat them (up to 3 tries).
Clock Drawing Test	Draw a clock showing **11:10**	0 or 2	Provide blank paper & pencil. Instruct: "Draw a clock that shows 11:10. Include all numbers and set the hands correctly."
Delayed Recall	Recall the 3 words from the beginning	0–3	After clock drawing, ask: "What were the 3 words I asked you to remember?"

Mini-Cog: Borson (2000). The Mini-Cog. © S. Borson. Used with permission for educational purposes.

Scoring Guide

•**Recall**: 1 point per correct word (maximum 3)
•**Clock Drawing**: 2 points = **Normal**; 0 points = **Abnormal**
•**Total Interpretation**:

- **0–2** → **Positive screen** (likely cognitive impairment → further evaluation needed)
- **3–5** → **Negative screen** (lower likelihood of impairment)