



# The NCLEX<sup>®</sup> Tutor

KoaPine Tutoring & Test Prep

## NCLEX<sup>®</sup> Nursing Nugget Pages

*2nd edition*



Justine Buick, MSN, RN

Thank you for buying the 2nd edition of the *NCLEX® Nursing Nugget Pages*!

Since 2014 I've been working with nursing students one-on-one while putting together my Nugget Pages. I came across too many students that weren't able to tell me basic information. You were getting overwhelmed with all the books and resources used during nursing school and nothing was sticking. In 2020, I published the first version of this book and many of you bought it. It was in 2021 that I started training and hiring the best online NCLEX Tutors to help all the students that were contacting me and using the Nuggets to study.

*NCLEX® Nursing Nugget Pages* includes the most common and important content that you'll get tested on in nursing school and the NCLEX exam. I've included tips for remembering content and added the "why" so that you understand content and not just memorize it. For all the visual learners, there are over 400 images throughout this book.

I prefer to use a real paper book for initially reviewing content over other resources. It's easier to read, quickly find information and write notes in it. I encourage you to use the *Nugget Pages* throughout nursing school and studying for the NCLEX.

I have enthusiastically partnered with **BRAINSCAPE.com**, a web and mobile flashcard study platform. All of the *NCLEX® Nursing Nugget Pages* have been turned into online flashcards. It is the perfect way to test your knowledge and have better long-term retention of content through spaced repetition. You can use the flashcards on their own or with your study resources.



I absolutely love teaching nursing students and simplifying topics for better understanding. Thank you for choosing me and the rest of "The NCLEX Tutors" to help you on this journey.

**Justine Buick, MSN, RN**  
**"The NCLEX Tutor"**  
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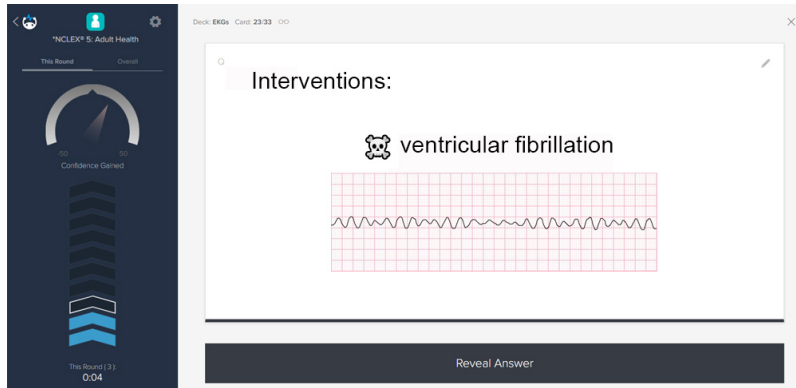
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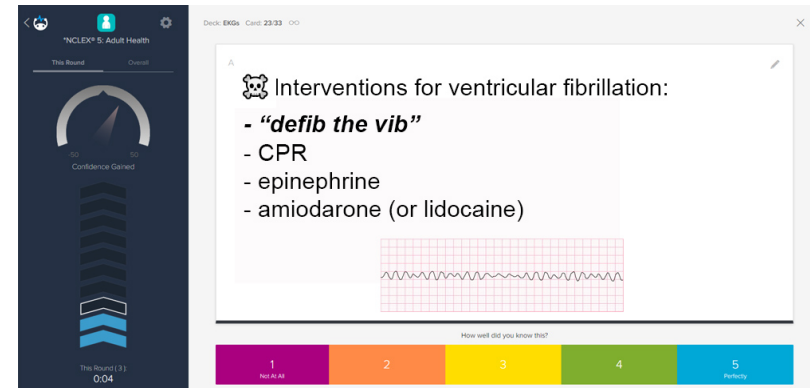
## Examples of NCLEX flashcards available at [brainscape.com/learn/nclex-rn](https://brainscape.com/learn/nclex-rn)

front of card



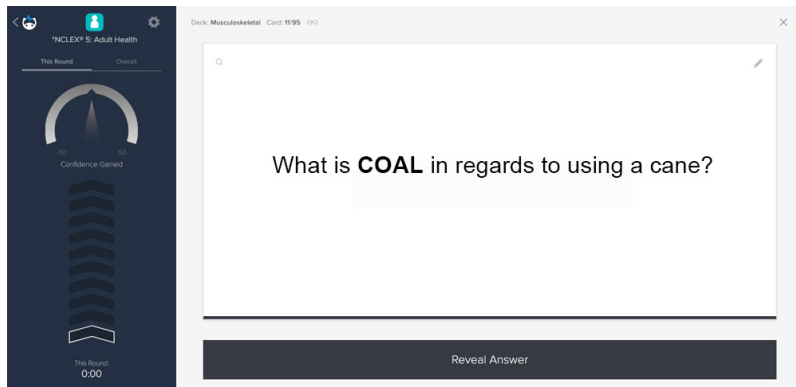
The front of the card displays a question interface. On the left, a sidebar shows a progress gauge and a stack of cards. The main area contains the question: "Interventions: ventricular fibrillation" with a corresponding ECG waveform showing irregular, chaotic waves. A "Reveal Answer" button is at the bottom.

back of card



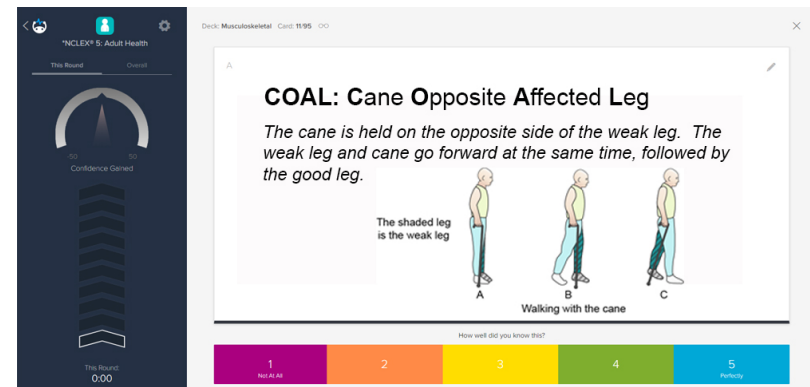
The back of the card shows the answer: "Interventions for ventricular fibrillation: - 'defib the vib' - CPR - epinephrine - amiodarone (or lidocaine)". It includes a small ECG waveform and a rating scale from 1 (Not at all) to 5 (Perfectly).

front of card



The front of the card displays a question: "What is **COAL** in regards to using a cane?". The sidebar and main area layout are consistent with the previous card.

back of card



The back of the card provides the answer: "COAL: Cane Opposite Affected Leg" and explains: "The cane is held on the opposite side of the weak leg. The weak leg and cane go forward at the same time, followed by the good leg." It includes a diagram showing three steps (A, B, C) of walking with a cane, where the shaded leg is the weak leg. A rating scale is at the bottom.



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# Health & Physical Assessment

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## Principles

- **The Nurse** spends the most time with the client, has the most complete picture, and communicates the client's needs to the rest of the health care team the most effectively.



### 3 areas of assessment:

- **Body:** assess the physical systems
- **Mind:** assess mental health
- **Spirit:** assess for religious or spiritual beliefs

**A Clinical Judgement Model is used to guide nursing care using critical thinking when caring for clients:**

- 1) **Assess** the client and see if you **NOTICE** any abnormal or unusual findings
- 2) **Analyze or INTERPRET** the data and ask yourself, why are these things occurring?
- 3) Figure out what you are going to do with that data and make a **Plan** to **RESPOND**.
  - **Prioritize** the most important things!
- 4) **Evaluate** to see how the client is doing and intervene as necessary. **REFLECT** on what worked and what didn't work.

## How to Study Diseases/Conditions:

1. Review the **Patho, Cause, Risk factors**
2. **Signs and Symptoms (S&S)**
3. **Diagnostic tests**
4. **Interventions (Int)**
  - nursing care
  - teaching
  - medical interventions (ex: surgery, chest tubes, thoracentesis)
  - meds

**clinical pathway/care plan:** a plan that everyone agrees to and guides evidence-base practice (EBP) for best client care.

## Purpose of doing an assessment

- to gather data (especially abnormal data) about the client to heal the client or prevent them from getting sick
- to notify the health care provider (HCP) of immediate complications or changes in the client's condition in order to update the care plan
  - *HCP can be a doctor, nurse practitioner or physician assistant*

Use 2 client identifiers to ID client (ex: name and DOB/SSN/phone number/address)

## Types of Assessment Data

- **Subjective data:** what the client tells you - pain is subjective because only they can feel it
- **Objective data:** what anyone can observe - vital signs

## Types of Assessments

- **focused assessment:** focuses on the immediate concern and is done when the client has a specific complaint or immediate information is needed
- **comprehensive assessment:** assess the entire client head to toe
  - body systems: neuro, respiratory, cardiac, gastrointestinal, renal, musculoskeletal, skin
  - do the assessment in this order: inspect, palpate, percuss, auscultate
  - abdominal assessment goes in this order: inspect, auscultate, percuss, palpate (least invasive to most invasive)

**To get an overall picture of the client, also look at:**

- labs
  - CBC, BMP or CMP
  - labs specific to problem
- imaging diagnostic tests
  - x-rays, CT scan, MRI, etc
- medical/surgical history and physical from HCP
- medication administration record (MAR)

## How often assessments are done

- **Post-Op:** focused assessments every 5-15 minutes
- **ICU (intensive care unit):** about every 1-2 hours
- **Progressive or Step-down unit:** about every 2-4 hours
- **Medical-surgical floor:** about every 4-8 hours

**These all mean the same thing but said in slightly different ways**

| 1) Nursing Process<br><b>ADPIE</b>               | 2) Tanner's Clinical Judgement Model<br>(easiest one to remember) | 3) NCSBN Clinical Judgement Measurement Model (CJMM) |
|--------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------|
| <b>Assess</b>                                    | <b>NOTICE</b>                                                     | recognize <b>Cues</b>                                |
| Nursing <b>D</b> agnosis<br>(getting phased out) | <b>INTERPRET</b>                                                  | <b>Analyze</b> cues & <b>Prioritize</b>              |
| <b>P</b> lan (short and long term goals)         | <b>RESPOND</b>                                                    | generate <b>Solutions</b> (expected outcomes)        |
| <b>I</b> mplementation                           |                                                                   | take <b>Action</b>                                   |
| <b>E</b> valuation                               | <b>REFLECT</b>                                                    | <b>Evaluate</b> outcomes                             |



Fundamentals



# Health & Physical Assessment

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## Vital Signs

**Temp:** older adults may have a normal lower temp (down to 95F, 35C); dehydration, stress, ovulation and strenuous exercise can raise temp

- no rectal temps for clients at risk for bleeding or infection (ex: DIC, leukemia)
- no oral temps for oral surgery clients
- **febrile:** has a fever/high temp
- **afebrile:** NO fever/normal temp

**Pulse:** use the radial to get a standard pulse and check for irregularity, bounding or thready pulse

- if normal count for 30 sec x 2
- if irregular, count for one full minute using the apical pulse

**Respirations:** older adults may have a normal higher rate (up to 22); check the rate, rhythm and depth (shallow or deep? regular or irregular?)

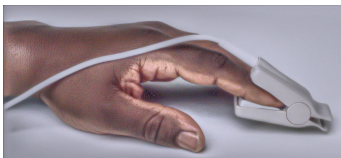
- count for 30 seconds X 2. Or if irregular count for one full minute.

**Blood pressure:** cuff that is too small will give a false high reading

- put arm at heart level with palm up to get BP and stay quiet while measuring
- for clients taking antihypertensives or fainting/dizziness, take orthostatic BPs
  - supine, sitting, standing BPs
  - drop of 20 mm Hg or more indicates orthostatic hypotension
- >180/120 is a medical emergency
- take BP in 1-2 minutes if need another reading

**Oxygen saturation (SaO<sub>2</sub>):** 95%-100%

- <93%: call HCP
- <88%: critical



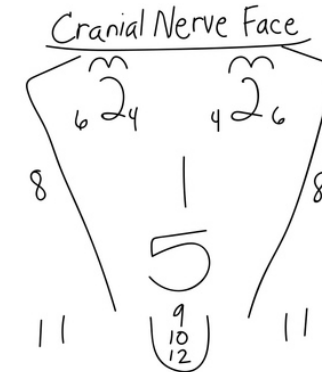
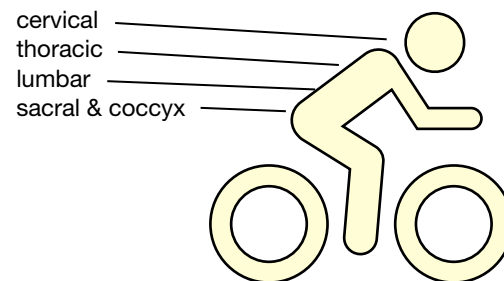
## Neuro

### • Basic neuro assessment includes:

- **A&Ox4:** ask about person, place, time and situation
- eye, hearing and speaking assessment
- **PERRLA** is using a light to check if Pupils are:
  - Equal
  - Round
  - React to Light
  - Accommodate (pupils constrict as objects get closer)

### 4 regions of the spine

- **Cervical:** C1-C7
  - nerves control breathing, arm, and neck movement
- **Thoracic:** T1-T12
  - nerves control chest, back, and abdomen
- **Lumbar:** L1-L5
  - nerves control lower abdomen, buttock and leg strength
- **Sacral and Coccyx:** S1-S5
  - nerves control thighs, lower leg strength, and genitals

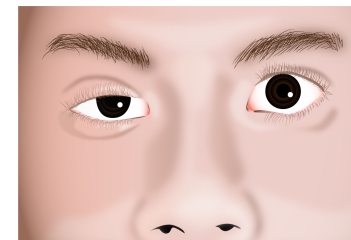


### Cranial Nerves

**Oh, Oh, Oh! To Touch And Feel A Good Velvet, Such Heaven!**

- 1 - Olfactory:** smell
- 2 - Optic:** vision
- 3 - Oculomotor:** pupils and eyelids
- 4 - Trochlear:** downward and inward of eyes
- 5 - Trigeminal:** chewing
- 6 - Abducens:** eyes side to side/lateral
- 7 - Facial:** all the facial muscles and taste
- 8 - Acoustic/Vestibulocochlear:** hearing
- 9 - Glossopharyngeal:** swallowing and taste
- 10 - Vagus:** swallowing and speaking
- 11 - Spinal Accessory:** shoulders
- 12 - Hypoglossal:** tongue strength

- **Romberg test:** tests balance by standing with feet apart, closing eyes and keeping balance
- **ptosis:** when one eye droops



## Fundamentals



# Health & Physical Assessment

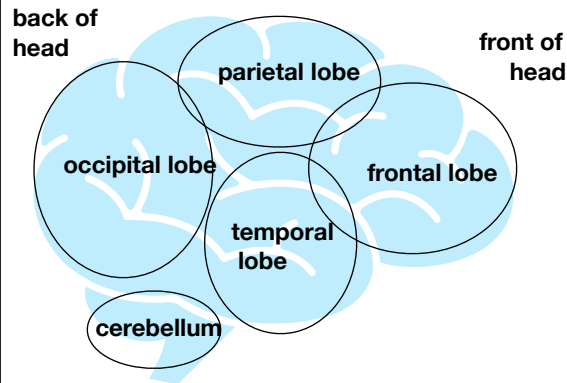
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## Fundamentals

### Areas of the brain

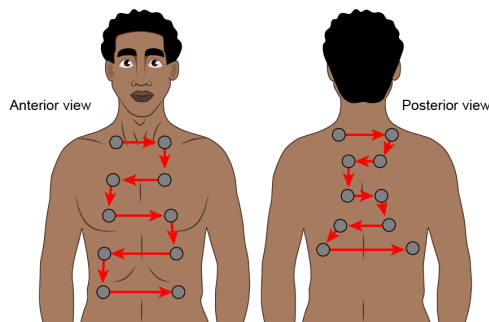
- **frontal lobe:** personality changes, speech
- **parietal lobe:** temp, taste, and movement
- **temporal lobe:** hearing, language comprehension, memories
- **occipital lobe:** vision
- **cerebellum:** movement/gait and balance



### Respiratory

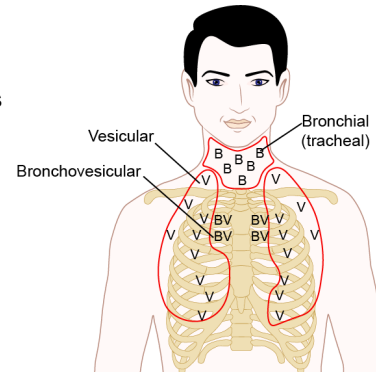
#### Basic respiratory assessment includes:

- asking about difficulty breathing, cough, mucus production
- listen to lung sounds
- get O2 saturation level



stethoscope placement for lung sounds

normal lung sounds



#### Terms:

- **dyspnea:** difficulty breathing
- **tachypnea:** rapid respirations > 20
- **bradypnea:** slow respirations < 12
- **apnea:** periods of not breathing
- **adventitious breath sounds:** abnormal breath sounds such as:
  - **stridor:** high-pitched, harsh sound from an obstructed airway
  - **chene-stokes:** apnea lasting 10-60 seconds followed by hyperventilation; indicates a dying client but may be normal in babies
  - **diminished lung sounds:** an area that lung sounds cannot be heard well
    - **atelectasis:** incomplete lung expansion caused by not taking normal breaths
    - common with pneumonia and post-op
  - **crackles:** heard in pneumonia, asthma, COPD, pulmonary edema
    - **fine crackles:** a little bit of fluid in lungs
    - **medium crackles:** condition is getting worse
    - **coarse crackles:** gurgling sounds; really bad!
  - **wheeze:** high squeaky sound, small airways are narrowing usually in asthma
  - **rhonchi:** sounds like snoring, may clear with cough
  - **pleural friction rub:** low-pitched grating sound from pleurisy (inflammation of lung surfaces)

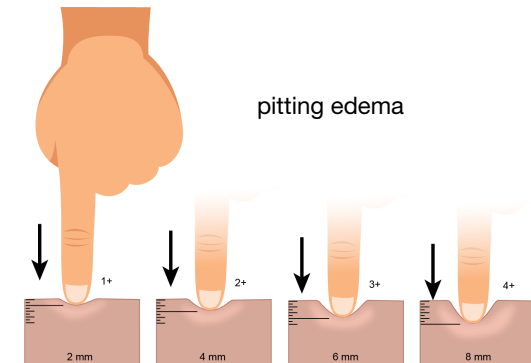
### Cardiac

#### Basic cardiac assessment includes:

- asking about chest pain or chest discomfort
- listening to heart sounds
- checking pulses
- checking capillary refill
- checking skin temperature and color
- checking for edema and skin turgor
- assessing cardiac rhythm strip
- **bradycardia:** heart rate < 60
- **tachycardia:** heart rate > 100
- **capillary refill:** < 3 seconds is normal (push in nailbed); refers to circulation

**pitting edema** (clients shouldn't have edema & refers to back up of fluids due to HF or CKD)

- 1+ = 2 mm: a small pit
- 2+ = 4 mm: rebounds in a few seconds
- 3+ = 6 mm: a deep pit and rebounds in 10-20 seconds
- 4+ = 8 mm: severe edema and rebounds > 30 seconds





# Health & Physical Assessment

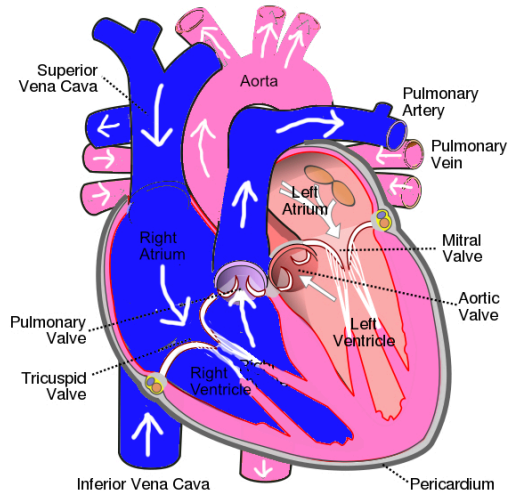
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## Fundamentals

### Blood flow through heart:

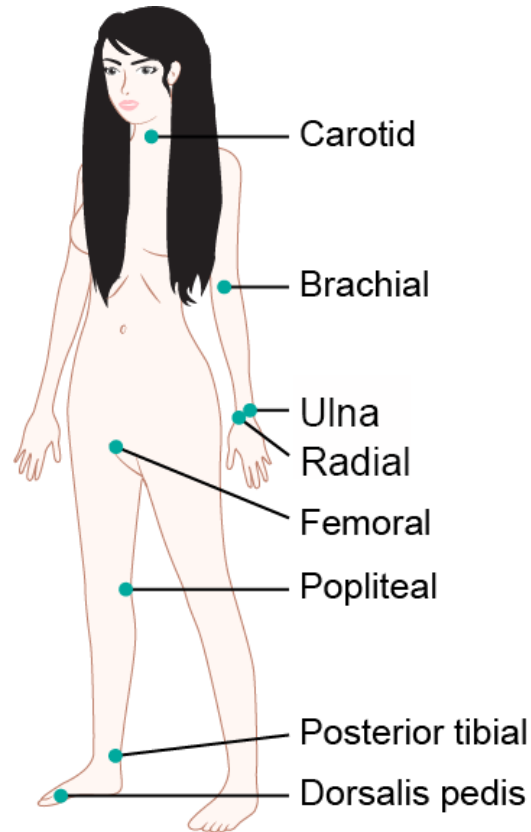
- 1) into the vena cava
- 2) right atrium > tricuspid valve > right ventricle
- 3) pulmonary valve > pulmonary artery > lungs
- 4) pulmonary veins
- 5) left atrium > mitral valve > left ventricle
- 6) aortic valve > aorta
- 7) systemic circulation (throughout body)
- 8) back to vena cava



- **S1 and S2:** normal heart sounds
  - known as "lub dub"
- **S3 and S4:** abnormal heart sounds
  - associated with cardiac disease
- **heart murmur:** abnormal heart sound
  - whooshing, swishing or clicking noise
- **syncope:** loss of consciousness

### Pulse strengths:

- 4+: strong and bounding (FVO)
- 3+: full pulse - less severe (FVO)
- 2+: normal - easily palpable
- 1+: weak, barely palpable (FVD)



### 5 Heart sounds:

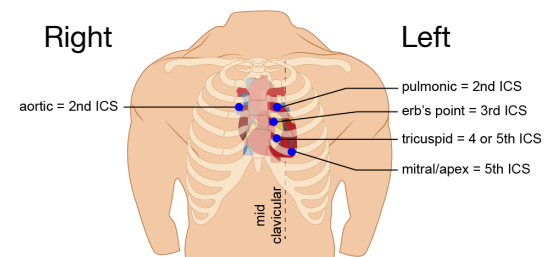
#### APE To Man

- **A:** Aortic: 2nd RICS (aortic stenosis)
- **P:** Pulmonic: 2nd LICS (murmur)
- **E:** Erb's point: 3rd LICS
- **T:** Tricuspid: 4th LICS
- **M:** Mitral/Apex: 5th LMCL (listen for apical pulse, aortic regurgitation)

RICS: right intercostal space

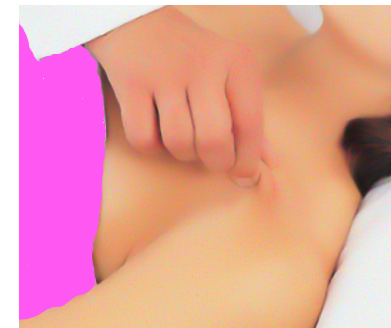
LICS: left intercostal space

LMCL: left midclavicular line



**skin turgor:** is assessing the client's fluid status by pinching a fold of skin on sternum or forearm

- skin tents up: indicates dehydration or FVD
  - some older client's skin will stay tented due to decreased skin elasticity
- skin returns to the normal position: no issues







# Health & Physical Assessment

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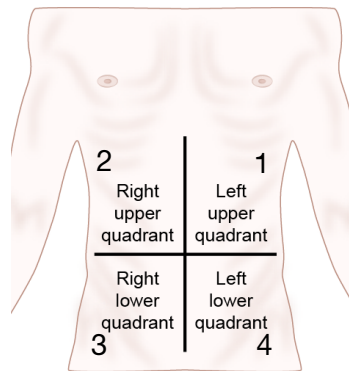
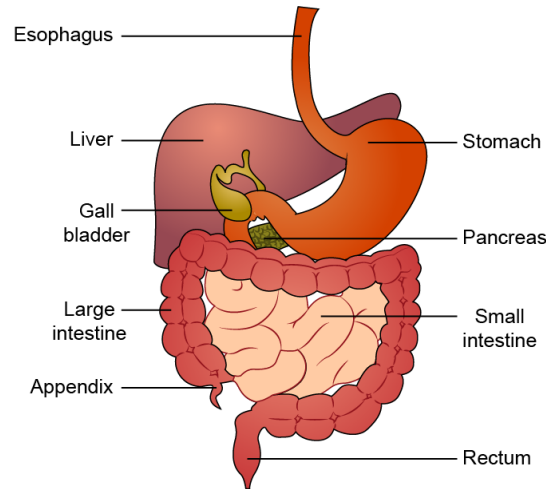
## Fundamentals

### Gastrointestinal

- **Basic abdominal assessment includes:**
  - listening to bowel sounds
  - ask when last bowel movement was
  - ask if passing gas/flatus
  - experiencing any N/V/D
  - determining appetite
- **Terms**
  - hematemesis (vomiting blood)
  - melena (blood in stool/tarry stools)
  - cachexia: malnutrition/wasting away
- **abdominal assessment goes in this order:** inspect, auscultate, percuss, palpate (least invasive to most invasive)
- **Listen** to each quadrant for 5 minutes = a total of 20 minutes
- **Types of bowel sounds are:**
  - **absent:** no bowel sounds
  - **hypoactive:** 1 sound every 3-5 minutes
  - **normal:** 5-30 clicks or gurgles per minute
  - **hyperactive:** > 30 sounds per minute or an increase from the client's baseline
  - start at 1) upper left, 2) upper right, 3) lower right, 4) lower left

#### Percussion sounds:

- dull tone: spleen, liver
- flat tone: bone
- hyperresonance: lungs
- tympany: abdomen



### Function of the pancreas

- **endocrine organ:** to release insulin so the body can regulate glucose/sugar
- **exocrine organ:** to release enzymes for food digestion

- **Function of the gallbladder:** store bile that's made by the liver for food digestion

### 4 main functions of the liver are:

1. to make clotting factors to prevent bleeding
2. to make proteins so all the organs and cells can function
3. to metabolize toxins and cholesterol
4. to make bile for digestion

### Renal

#### Basic renal/urinary assessment includes:

- checking UO and color
- monitoring I&O
- checking labs: BUN, creatinine, GFR, electrolytes
- UA & CS
- creatinine is a better indicator of renal function

#### Minimum UO:

- adult: at least 30 mL/hour
- infant (up to 1 year): at least 2 mL/kg/hour



# Health & Physical Assessment

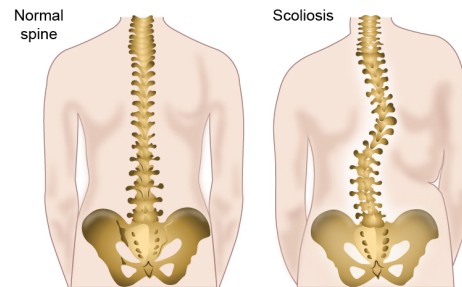
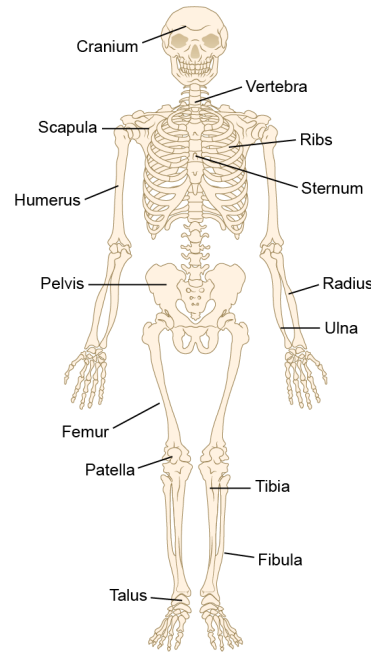
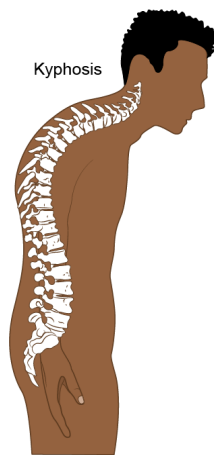
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## Fundamentals

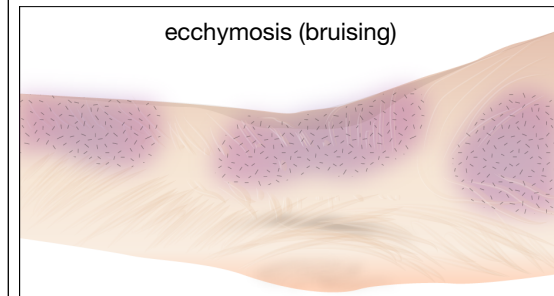
### Musculoskeletal

- **Basic musculoskeletal assessment includes:**
  - checking muscle strength and range of motion (ROM)
  - asking about pain, numbness, and tingling
  - checking electrolytes and other labs
  - imaging tests for the spine and head
- **Muscle strength:**
  - 0 is the worst: no contractility
  - 5 is the best: normal ROM
- **kyphosis/hunchback:** curved thoracic spine (more common in elderly)
- **scoliosis:** lateral spinal curvature (tested in teenagers)
- **Deep tendon reflex grading**
- (using a hammer to tap the knee)
  - 0 = no response; always abnormal
  - 1+ = a slight but present response; may or may not be normal
  - 2+ = a brisk response; normal
  - 3+ = a very brisk response; may or may not be normal
  - 4+ = a tap elicits a repeating reflex (clonus); always abnormal



### Skin

- **Basic skin assessment includes:**
  - skin color (ask if that color is normal for them)
  - wounds (especially on bony areas)
  - rashes
  - bruising
  - abnormal moles/freckles
  - asking about new meds or exposure to infectious diseases
    - many meds cause rashes
- **dark-skinned clients:** check for cyanosis/blue/low O2 on lips, tongue, mucous membranes, nail beds, and conjunctiva
- **erythema:** redness
  - indicates injury, inflammation or infection
- **pallor:** white/pale skin
  - indicates anemia
- **jaundice:** yellow skin
  - indicates liver failure / cirrhosis
- **cyanosis:** blue skin
  - indicates low oxygen
- **emaciated:** thin/malnourished
- **petechiae/purpura:** spots on skin that indicate bleeding (low platelets/thrombocytopenia)
- **ecchymosis:** bruising





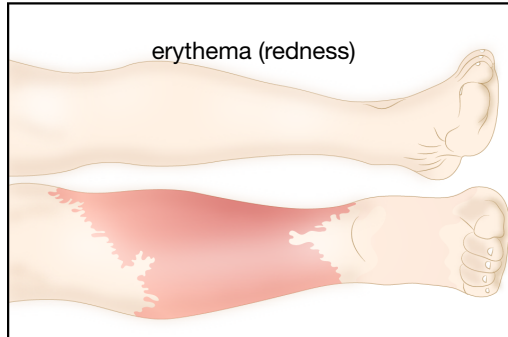


# Health & Physical Assessment

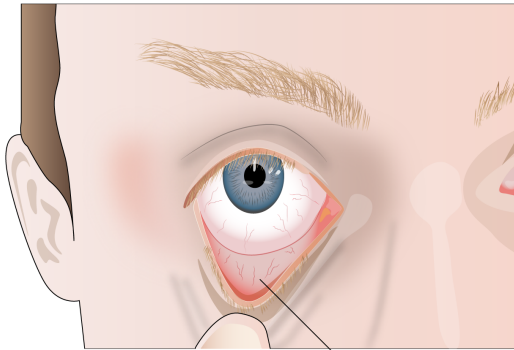
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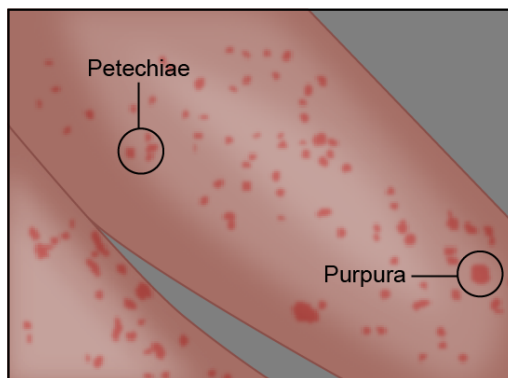
## Fundamentals



erythema (redness)



Pale conjunctiva



Petechiae

Purpura

## Pain

### Best indicators of pain:

- what the client says it is (subjective)
- conditions that lead to pain (cancer, surgery)

### Pain assessment questions

- **Location:** where is the pain?
- **Severity:** how bad is it? use appropriate pain scale
- **Character:** what does it feel like?
- **Onset:** when did it begin?
- **Associated factors:** are there other symptoms that occur with it? underlying factors or conditions?
- **Pattern:** what makes it better? what makes it worse?
- **What pain meds** do you take?
- **Do you use alternative therapies** to manage pain?

### Pain scales:

- 0 - 10 for adults
- **FLACC** pain scale: for nonverbal or ages 2-10 years old
  - **F**ace, **L**egs, **A**ctivity, **C**ry, **C**onsolability
- Wong-Baker faces pain rating scale



- sedated and decreased mental cognition have highest risk of under-reported pain
- S/S pain in unconscious or non-verbal clients: ↑HR, ↑RR, shallow respirations, facial grimacing, gasping, stooped, moaning, rubbing a body part, guarding, crying
- signs of poorly controlled pain: decreased cough, oliguria, hypoventilation

### Types of pain:

- **acute pain:** short duration and identifiable cause; VS are ↑
- **chronic pain:** cancer, fibromyalgia, back pain; VS are normal

### Teaching and discharge planning

- begins during admission!
- during the admission assessment, data is gathered such as home environment, perceptions, barriers, and available resources, so teaching can begin right away if there are needs
- suggest small changes to start
- return demonstration is best
- non-adherent: doesn't follow the treatment plan

### How to Document

- use black ink
- date/time/name on each entry
- document right after you do something
- be factual/objective (no opinions or judgements or "appears")
  - ok to write "client found laying on the floor"
- use "quotes" for subjective data (ex: client states "I'm just not feeling well")
- document refusals, calls to HCP
- don't document for others
- don't leave blank spaces on forms
- no unacceptable abbreviations (med administration page 57)
- for documentation errors: draw 1 line through it initial, date, and time
  - or "mistaken entry, wrong client" and initial, date and time



# Health & Physical Assessment

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## Fundamentals

### Risk factors of Diseases

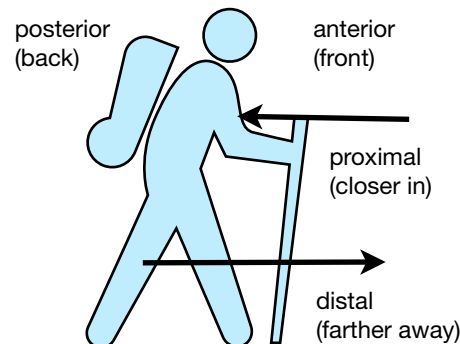
- **modifiable risk factors:** things the client can change: diet, exercise
- **non-modifiable risk factors:** things the client can't change: like family history/genetics, age and sex

### Levels of disease Prevention

- **Primary = Prevention**
  - teach about healthy lifestyle: diet, exercise, teeth brushing, car seats, helmets, vitamins, vaccines, sunscreen, not smoking, preventing falls, limiting/eliminating alcohol, wearing masks in public
- **Secondary = Screenings**
  - preventing cancer: mammograms, colonoscopy, pap smears; stopping smoking, safer sex practices, if a poor diet encourage a healthier diet
- **Tertiary = Treatment**
  - to maximize function of a client that already has the disease: support groups, cardiac rehab MI, skin care for diabetics

### Basic medical terms

- **posterior:** the back of something
- **anterior:** the front of something
- **distal:** away from something
- **proximal:** closer to something



### Changes in older adults

#### Neuro

- 1) older clients may be confused and lethargic with infections
  - assess for UTI and PNX/other infections
- 2) hard of hearing (HOH)
  - speak directly with low tones - no loud voices
- 3) vision changes
  - large print books, bright tape on floor to prevent falls, safety lights
- 4) decreased sensitivity to pain and temperature
  - check water temperature; assess for injury
- 5) takes longer to learn and remember
  - provide more time for teaching

#### Mental health

- 6) older white men that live alone are higher risk of suicide
  - assess for suicide/depression
- 7) increased risk of being abused
  - assess for anxiety, injuries, poor hygiene, lack of \$, genital itching

#### Immune

- 8) decreased healing time & immune system
  - encourage vaccinations and prevent infections
- 9) increased risk of cancer
  - encourage screening tests

#### Meds

- 10) decreased liver and kidney function
  - use caution with nephro and hepatotoxic drugs
- 11) polypharmacy
  - check for duplicate medications and contraindications

#### Renal

- 12) increased risk of incontinence
  - encourage toilet training and exercises

### Cardiac/Respiratory

13) decreased cardiac and respiratory function: gets out of breath easier

- provide time for slower movements
- 14) varicose veins
  - encourage ambulation

### Skin

15) skin changes such as dry skin, wrinkles, skin tears, spider angioma, varicose veins and ecchymosis (bruising)

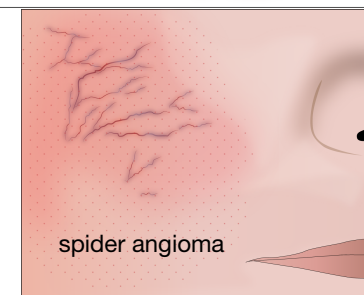
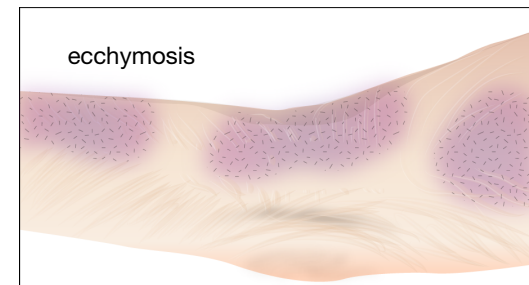
- apply lotion, be gentle when using tape, avoid IV insertion

### Musculoskeletal

- 16) Increased risk of falls
  - fall precautions (page 47)
  - encourage exercise

### Gastrointestinal

- 17) nutritional changes
  - assess diet and ability to chew





# Health & Physical Assessment

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## Fundamentals

### Common abbreviations/terms:

- **AAA:** abdominal aortic aneurysm
- **ABG:** arterial blood gas
- **ABX:** antibiotics
- **ACE:** angiotensin converting enzyme
- **ADD:** attention deficit disorder
- **ADH:** antidiuretic hormone
- **ADHD:** attention deficit hyperactivity disorder
- **ADLs:** activities of daily living
- **AED:** automated external defibrillator
- **AIDS:** acquired immunodeficiency syndrome
- **AKA:** above knee amputation
- **AKI:** acute kidney injury
- **ALP:** alkaline phosphatase
- **ALT:** alanine transaminase
- **AMA:** against medical advice
- **A&O:** alert and oriented
- **aPTT:** activated partial thromboplastin time
- **ARB:** angiotensin receptor blockers
- **ARDS:** acute respiratory distress syndrome
- **ARF:** acute: respiratory failure or renal failure
- **AST:** aspartate aminotransferase
- **AV:** atrioventricular
- **BG:** blood glucose
- **bid:** two times a day
- **BiPAP:** bilevel positive airway pressure
- **BKA:** below knee amputation
- **BM:** bowel movement
- **BMI:** body mass index
- **BMP:** basic metabolic panel
- **BNP:** brain natriuretic peptide
- **BP:** blood pressure
- **BPH:** benign prostate hyperplasia
- **BS:** blood sugar
- **BUN:** blood urea nitrogen
- **Ca:** calcium
- **CABG:** coronary arterial bypass graft
- **CAD:** coronary artery disease
- **CAM:** complementary and alternative medicine
- **CBC:** complete blood count
- **CBI:** continuous bladder irrigation
- **CHF:** congestive heart failure
- **CK (CPK-MB):** creatine kinase
- **CKD:** chronic kidney disease
- **Cl:** chloride
- **CMP:** complete metabolic panel
- **CNS:** central nervous system
- **CO:** cardiac output
- **CO2:** carbon dioxide
- **COPD:** chronic obstructive pulmonary disease
- **CP:** chest pain
- **CPAP:** continuous positive airway pressure
- **CPM:** continuous passive motion
- **CPR:** cardiopulmonary resuscitation
- **CRF:** chronic renal failure
- **CSF:** cerebral spinal fluid
- **CT:** computed tomography (CT scan)
- **CV:** cardiovascular
- **CVA:** cerebral vascular accident
- **CVAD:** central venous access device
- **CVP:** central venous pressure
- **D5W:** 5% dextrose in water
- **DASH:** dietary approaches to stop hypertension
- **D/C'd:** discontinued
- **DI:** diabetes insipidus
- **DIC:** disseminated intravascular coagulation
- **DKA:** diabetic ketone acidosis
- **DM:** diabetes mellitus
- **DMARDs:** disease modifying antirheumatic drugs
- **DNR:** do not resuscitate
- **DTRs:** deep tendon reflexes
- **DVT:** deep vein thrombosis
- **EBP:** evidence based practice
- **ECG or EKG:** electrocardiography
- **ECT:** electroconvulsive therapy
- **ED:** emergency department
- **EHR:** electronic health record
- **ENT:** ear nose throat
- **EPS:** extrapyramidal symptoms
- **ESRD:** end stage renal disease
- **ET:** endotracheal tube
- **F&E:** fluids & electrolytes
- **FHR:** fetal heart rate
- **FVD:** fluid volume deficient
- **FVO:** fluid volume overload
- **GAD:** generalized anxiety disorder
- **GERD:** gastroesophageal reflux disease
- **GFR:** glomerular filtration rate
- **GI:** gastrointestinal
- **HA:** headache
- **HAI:** hospital acquired infection
- **HCO3:** bicarbonate
- **HCP:** healthcare provider
- **Hct:** hematocrit
- **HD:** hemodialysis
- **HF:** heart failure
- **Hgb:** hemoglobin
- **H&H:** hemoglobin and hematocrit
- **HHS:** hyperosmolar hyperglycemic state
- **HIT:** heparin induced thrombocytopenia
- **HIV:** human immunodeficiency virus
- **h/o:** history of
- **HOB:** head of bed
- **HOH:** hard of hearing
- **H&P:** history and physical
- **HPV:** human papillomavirus
- **HR:** heart rate
- **HTN:** hypertension
- **IBS:** irritable bowel syndrome
- **ICP:** intracranial pressure
- **ICU:** intensive care unit
- **INR:** international normalized ratio
- **INT:** interventions
- **I&O:** intake and output
- **IS:** incentive spirometer
- **IV:** intravenous
- **IVP:** intravenous push
- **IVPB:** intravenous piggyback
- **JVD:** jugular vein distention
- **K:** potassium
- **KCl:** potassium chloride
- **KVO:** keep vein open
- **LFT:** liver function tests
- **LOC:** level of consciousness



# Pharmacology

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| Topics                          | Page # | Major Classifications & Content Covered in the Nugget Pages                                                                                                                                                                                                                                          |
|---------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Med Administration</b>       | 57-60  | MAR, med rec, 5 med rights, wrist bands, doses, high alert meds, unacceptable abbreviations, side effects vs. adverse reactions, toxicity, routes, needle sizes, math, food-med interactions, med-med interactions, weird excretion colors, therapeutic drug levels, anticholinergic meds, antidotes |
| <b>Cardiac</b>                  | 61-64  | Antihypertensives, Antianginals, Antiplatelets, Anticoagulants, Thrombolytics, Diuretics, Vasopressors                                                                                                                                                                                               |
| <b>Endocrine</b>                | 65-66  | Insulins, Glucagon, Oral antidiabetics, Hormone replacements, Corticosteroids                                                                                                                                                                                                                        |
| <b>Eye/Ear/Nose/Skin</b>        | 67     | Antiglaucoma, Antihistamines, Eye and Ear drops, Nasal spray, Antiseptic skin creams, Corticosteroids, Antiacne                                                                                                                                                                                      |
| <b>Gastrointestinal</b>         | 68-69  | Antiemetics, Antidiarrheals, Laxatives/Stool softeners, Antacids, Pancreatic enzymes, Proton pump inhibitors, H2 receptor blockers, Corticosteroids, Antilipidemics, Vitamins, Minerals                                                                                                              |
| <b>Immune</b>                   | 70-71  | Antivirals, Antifungals, Antibiotics, Probiotics, Corticosteroids, DMARDs/Immunosuppressants, Immunoglobulin                                                                                                                                                                                         |
| <b>Maternity</b>                | 72     | Vitamins, Mineral, Electrolyte/Tocolytic, Hormone, Prostaglandin, Immunoglobulin, Corticosteroids, Opioid analgesics                                                                                                                                                                                 |
| <b>Mental Health</b>            | 73-75  | Antidepressants, Antismoking, Antimanic, Antianxiety, Insomnia meds, Antipsychotics, Cannabis sativa, Amphetamines, Meds for alcoholism                                                                                                                                                              |
| <b>Musculoskeletal</b>          | 76     | Antigout, Antiosteoporotics, Muscle relaxers, Electrolyte, Vitamin                                                                                                                                                                                                                                   |
| <b>Neuro</b>                    | 77     | Anticonvulsants, Antiparkinsons, Osmotic diuretic, Myasthenia gravis meds, Antialzheimers                                                                                                                                                                                                            |
| <b>Newborn</b>                  | 78     | Lung surfactant, Vitamin, Antibiotic, Vaccine                                                                                                                                                                                                                                                        |
| <b>Oncology</b>                 | 79     | Antineoplastics, Hematopoietics                                                                                                                                                                                                                                                                      |
| <b>Pain</b>                     | 80     | NSAIDs, Acetaminophen (Analgesics, Antipyretics), Opioids, Opioid antagonist, Antimigraines                                                                                                                                                                                                          |
| <b>Renal &amp; Reproductive</b> | 81     | Urinary antispasmodics, Female contraceptives, Erectile dysfunction drugs, Antibiotics, Analgesics, BPH meds, Antiprotozoal                                                                                                                                                                          |
| <b>Respiratory</b>              | 82-83  | Bronchodilators, Antiasthmatic, Corticosteroids, Smoking deterrent, Antiallergy/Antihistamines, Expectorant, Mucolytic, Antitussive, Antituberculosis, Vasopressors/bronchodilator/cardiac stimulant                                                                                                 |



# Med Administration

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## Pharmacology

### Routes

#### 1) PO / by mouth

- don't crush enteric coated, buccal, sublingual, extended release (ER or XR), sustained release (SR), iron pills
- don't open most capsules
  - designed to be released over time
- crushing meds and giving in applesauce is fine as long as med is allowed to be crushed & is an adult

meds over applesauce



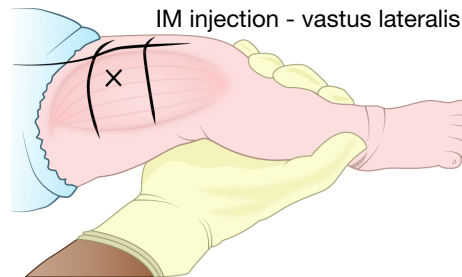
#### 2) Sublingual

- administered under the tongue
  - ex: nitroglycerin



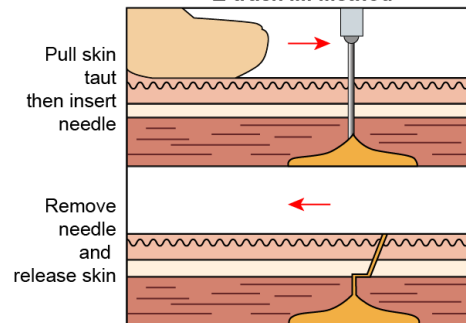
#### 3) IM / Intramuscular

- administered by shot in the muscle tissue
  - vastus lateralis common with infants
  - deltoid common with kids/adults
- all needles go into a red sharps container
- use a large bore needle: 18 gauge at 90 degrees
- Z-track method: given to prevent leakage and staining of subcutaneous tissue
  - iron is commonly given this way



IM injection - vastus lateralis

#### Z-track IM Method



#### 4) Buccal

- administered in the cheek
  - ex: pediatric liquid meds



#### 5) Intravenous (IVP, IVPB)

- administered in the vein
- clean IV hub with alcohol
- flush before and after with 0.9%NS
- check IV fluid compatibility
- IVP: IV push meds are typically diluted with normal saline and given slowly over 5 minutes
  - put air in vial first before withdrawing med
- always draw up meds in separate syringes
- IVPB / IV Piggyback: an IV med that is given slower using a pump and is placed above the main bag of fluids



#### 6) Ampules/IV

- tap ampule to get rid of bubbles
- use gauze around neck and snap off top while holding it away from you
- use a needle to draw up medication








# Endocrine Meds

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## Pharmacology

| Class                                | Names                                              | Indication                                                                                           | MOA | Common/Mild side effects | KILLER adverse reactions  | Nursing considerations                                                                                                                                                                    |
|--------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------|-----|--------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rapid-acting insulin (clear)         | - Lispro<br>- Aspart<br>- Glulisine<br><b>LAG</b>  | - treat high blood sugar<br>- diabetes mellitus                                                      |     |                          | severe hypoglycemia                                                                                          | O: 5 - 15 min<br>P: 1 - 2 hours<br>D: 3 - 5 hours<br>(peak is when hypoglycemic rxns can occur)<br>- have meal readily available & eat within 10 minutes                                  |
| short-acting insulin (clear)         | - regular (Humulin R)                              | IV to treat DKA<br>- only one given IV (check K, since insulin lowers K)<br>- hourly BS and K checks |     |                          |                                                                                                              | <b>subq</b><br>O: within 30 minutes<br>P: 2 - 4 hours<br>D: 5 - 8 hours<br><b>IV</b><br>O: 10 - 15 minutes<br>P: unknown<br>D: 4 hours<br>- have meal readily available<br>- give on time |
| intermediate-acting insulin (cloudy) | - NPH<br>- isophane (Humulin N)                    |                                                                                                      |     |                          |                                                                                                              | O: 1 - 2 hours<br>P: 4 - 12 hours<br>D: up to 24 hours<br>- can mix with rapid or short<br><b>- "draw clear, then cloudy"</b>                                                             |
| long acting insulin                  | - glargine<br>- detemir<br><b>"large and long"</b> |                                                                                                      |     |                          |                                                                                                              | can be given at bedtime<br>O: 3 - 6 hours<br>P: none<br>D: up to 24 hours                                                                                                                 |
| sugar                                | glugagon/D50                                       | low blood sugar                                                                                      |     |                          |                                                                                                              | give IV or IM if can't take PO                                                                                                                                                            |

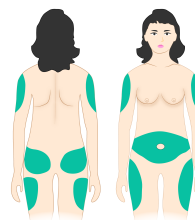


insulin flex pen

### Subcutaneous insulin guidelines:

- may need to double check dose with another nurse
- clean skin with alcohol before injection
- choose one area on the body to keep absorption rate the same; use 25-30 gauge needle at 45-90 degree angle typically in abdomen
- rotate around that site to prevent lipodystrophy (fatty, fibrous tissue)
- move at least 1.5" (3.8 cm) away from previous injection site

Insulin injection sites



example: sliding scale rapid acting: lispro

| blood glucose (mg/dL) | insulin (units) |
|-----------------------|-----------------|
| 151-200               | 3 units         |
| 201 - 250             | 5 units         |
| etc.                  | etc.            |



| Topics                  | Page #  | Content Covered in the Nugget Pages                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EKGs</b>             | 85-87   | NSR, sinus tach, afib, flutter, asystole, vtach, vfib, svt, pvc, MI, sinus brady, heart blocks                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Cardiac</b>          | 88-93   | Diagnostic tests/procedures, CABG, angina, CAD, cardiogenic shock, HF, cardiac tamponade, varicose veins, valvular heart disease, DVT, venous insufficiency, PAD, raynaud's, buerger's, aortic aneurysm, hypertension, inflammation of the heart, CPR                                                                                                                                                                                                                                     |
| <b>Endocrine</b>        | 94-98   | Hormones, DI and SIADH, addisons and cushings, hyperthyroidism and hypothyroidism, hyperparathyroidism and hypoparathyroidism, Diabetes mellitus 1 and 2, DKA, HHS, metabolic syndrome                                                                                                                                                                                                                                                                                                    |
| <b>Eye &amp; Ear</b>    | 99-101  | Diagnostic tests, safety, cataracts, glaucoma, macular degeneration, retinal detachment, object in eye, chemical splashes, eye contusion, hearing loss, hearing aids, meniere's                                                                                                                                                                                                                                                                                                           |
| <b>Gastrointestinal</b> | 102-109 | Diagnostic tests/procedures, GERD, gastritis, PUD, bariatric surgery, dumping syndrome, cholecystitis, cirrhosis, hepatitis, crohn's, IBS, pancreatitis, appendicitis, diverticulosis, diverticulitis, hemorrhoids, colostomy and ileostomy                                                                                                                                                                                                                                               |
| <b>Hematology</b>       | 110     | Iron deficiency anemia, folate deficiency anemia, vitamin B12 deficiency anemia (pernicious anemia), DIC                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Immune</b>           | 111     | AIDs/HIV, anaphylaxis, latex allergies, lupus, lyme disease                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Musculoskeletal</b>  | 112-119 | Diagnostic tests/procedures, strain/sprain/fracture/contracture, ORIF, traction, hip and knee replacements, spine surgeries, casts, fat embolism, compartment syndrome, osteomyelitis, amputations, canes/crutches/walkers, osteoporosis, gout, rheumatoid arthritis, osteoarthritis, fibromyalgia                                                                                                                                                                                        |
| <b>Neuro</b>            | 120-125 | Glasgow coma scale, unconscious, autonomic dysreflexia, ICP, head injuries/TBI, seizures, TIA, CVA, multiple sclerosis, myasthenia gravis, parkinson's disease, guillain-barre syndrome, meningitis, trigeminal neuralgia, bell's palsy, migraines, huntington's disease                                                                                                                                                                                                                  |
| <b>Oncology</b>         | 126-129 | Risk factors, stages of cancer, symptoms of cancer, chemotherapy (neutropenia, thrombocytopenia), tumor lysis syndrome, radiation, bone marrow transplant, pain control, skin cancer, leukemia, lymphoma, multiple myeloma, testicular cancer, breast cancer, colon cancer, esophageal cancer, gastric cancer, pancreatic cancer, intestinal tumors, lung cancer, cervical cancer, ovarian/endometrial cancer, laryngeal cancer, bladder cancer, prostate cancer, liver cancer and biopsy |
| <b>Renal</b>            | 130-133 | Urinary incontinence, AKI, CKD, hemodialysis, peritoneal dialysis, kidney transplant, UTI, hydronephrosis, kidney stones, polycystic kidney disease, epididymitis, prostatitis, BPH                                                                                                                                                                                                                                                                                                       |
| <b>Respiratory</b>      | 134-139 | Diagnostic tests, chest physiotherapy, thoracentesis, oxygen therapy, CPAP/BiPAP, ventilators, rib fracture, flail chest, pneumothorax, hemothorax, ARF, ARDS, asthma, COPD, pleural effusion, pulmonary edema, pulmonary embolism, pneumonia, influenza, legionnaire's, empyema, pleurisy, COVID-19, TB                                                                                                                                                                                  |
| <b>Skin</b>             | 140-145 | Wound drainage, diagnostic tests, candida albicans, tinea corporis, herpes zoster (shingles), cellulitis, MRSA, acne, psoriasis, bites & stings, contact dermatitis, skin cancer, pressure ulcers, wounds, dressings, burns                                                                                                                                                                                                                                                               |



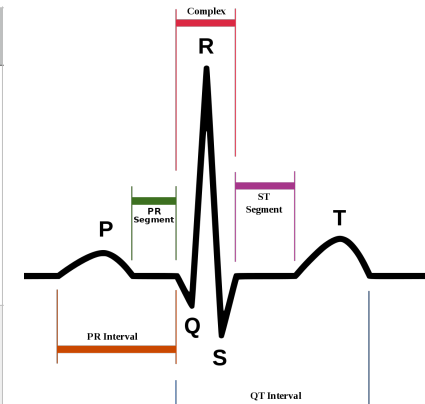
# EKGs

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Adult Health

| Strip | Name                                            | Meds/Interventions                                                                                                                  |
|-------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|       | NSR - normal sinus rhythm<br>between 60-100 bpm | none                                                                                                                                |
|       | sinus tachycardia<br>> 100 bpm                  | <b>decrease the HR with:</b><br><b>"BCDs"</b><br>- <b>B</b> eta blockers<br>- <b>C</b> alcium channel blockers<br>- <b>D</b> igoxin |
|       | atrial fibrillation<br>irregular, no P waves    | <b>high risk for blood clots:</b><br>- antiplatelets<br>- anticoagulants<br><b>to decrease heart rate:</b><br>- <b>BCDs</b>         |
|       | atrial flutter<br>"sawtooth waves"              |                                                                                                                                     |
|       | asystole<br>"flat line"                         | start CPR<br>epinephrine<br>NO defibrillation                                                                                       |



**Quick way to calculate HR:** count the peaks (the R waves) and multiply times 10.

Ex: 5 peaks X 10 = 50 beats per minute

## Normal intervals

- P-R = 3-5 tiny boxes
  - 0.12 - 0.20 secs
- QRS = 2-3 tiny boxes
  - 0.04 - 0.10 secs
- Q-T = 9-11 tiny boxes
  - 0.36 - 0.44 secs
- each tiny box = 0.04 seconds

## Common S&S for dysrhythmias due to ↓ CO:

- heart palpitations
- tachycardia
- SOB
- anxiety
- dizziness
- decreased LOC

## Causes of dysrhythmias:

- electrolyte imbalances
- CAD/blocked arteries
- heart damage from an MI
- cardiomyopathy
- ↑ BP
- hyperthyroidism
- smoking
- caffeine/alcohol
- meds/illegal drugs
- genetics





## Maternity

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| Topics                      | Page #  | Content Covered in the Nugget Pages                                                                                                                                                                                            |
|-----------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Prenatal</b>             | 155-158 | Fetal development, risk factors, nagele's rule, GTPAL, signs of pregnancy, weight gain, trimesters, appointments, fundal height, changes during pregnancy, nutrition/diets, diagnostic tests, risk conditions during pregnancy |
| <b>Labor &amp; Delivery</b> | 159-163 | Fetal presentations, stations, true vs. false labor, FHR and tones, HR variability, stages of labor, pain control, obstetrical procedures, problems during labor & delivery                                                    |
| <b>Postpartum</b>           | 164-165 | Complications (bleeding, infection), fundal assessment, lochia, breasts and breastfeeding, postpartum changes                                                                                                                  |
| <b>Newborn</b>              | 166-170 | APGAR, physical exam of newborn, thermal regulation, reflexes, newborn safety, parent teaching, complications, CPR, choking infant                                                                                             |



# Prenatal

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## Principles

### Fetal development

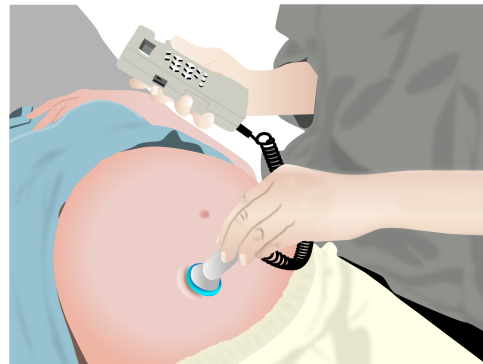
|               |                                          |
|---------------|------------------------------------------|
| week 12       | can determine sex of fetus               |
| week 10-12    | heartbeat of fetus detected by doppler   |
| week 20       | heartbeat of fetus detected by fetoscope |
| week 28       | if baby is born, able to breathe on own  |
| 1st trimester | fetal heart rate (FHR): 160-170          |
| end of 3rd    | FHR slows to 110-160 bpm                 |

### Risk factors for difficult pregnancy/loss of baby:

- age: <20 or >35 years old
- abuse/violence
- diabetes/cardiac disorders
- drugs/smoking/alcohol/meds
- **Nagele's rule:** due date = +9 months + 7 days (adjust year) from date of first day of last period
- **primigravida:** pregnant for first time
- **nullipara:** never given birth
- **GTPAL:**
  - **G: Gravity:** # of pregnancies (including present one)
  - **T: Term** births after 37 weeks
  - **P: Preterm** births before 37 weeks
  - **A: Abortions** or miscarriages
  - **L: Living** births
  - **Para:** # of births after 20 weeks

## Signs of pregnancy

- **presumptive signs** (a possibility of pregnancy: detected by woman) quickening: feeling of fetus moving at 16th-20th week of gestation, there are more signs like N/V and missed period
- **probable signs** (probably pregnant - detected by HCP)
  - Hegar's sign: the lower uterus starts to get soft at about week 6
  - Goodell's sign: softening of the cervix beginning of 2nd month
  - Chadwick's sign: blue-purple color of cervix/vagina area around week 6
  - Ballottement: rebounding of fetus when HCP presses on uterus
  - Braxton Hick contractions: irregular contractions that occur on and off
  - + pregnancy test for HCG (human chorionic gonadotropin)
- **positive signs** (definitely pregnant!)
  - fetal heart rate by doppler at 10-12 weeks and fetoscope at 20 weeks
  - HCP can feel the fetus move when pressing on abdomen
  - fetus seen on ultrasound



ultrasound + sign of pregnancy



## Weight gain

- 3-5 lbs (1.4 - 2.3 kg) for 1st trimester
- 1 lbs. (0.5 kg) per week for 2nd and 3rd trimesters
- will gain about 25-35 lbs (11 to 16 kg) total

## Trimesters

- 1st trimester: week 1-13
- 2nd trimester: week 14-27
- 3rd trimester: week 28-40

## HCP appointments:

- 1st and 2nd trimester: once a month visits
- 28-35 weeks: once every 2 weeks
- 36 weeks - delivery: once a week



Maternity



# Prenatal

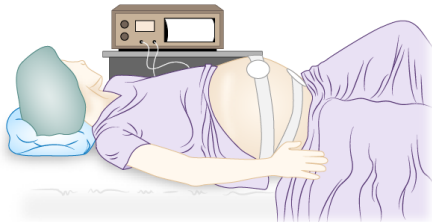
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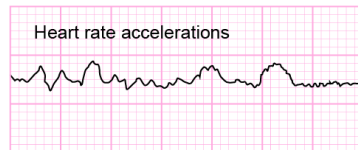
## Maternity

**6) Nonstress Test:** check fetal well being like FHR and placental functioning with external monitor; takes 20 min

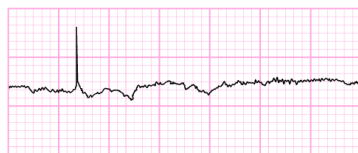
- 2 fetal heart accelerations of 15 bpm lasting at least 15 seconds is normal
- **Normal/Negative:** called a REACTIVE nonstress test: a HEALTHY fetus
- **Abnormal:** called a NONreactive
  - (the baby is NOT reacting - BAD)



### Non-Stress Test - Reactive



Fetal movements



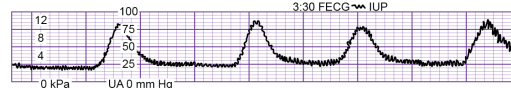
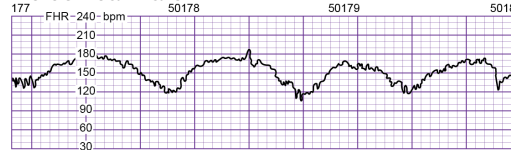
### 7) Contraction Stress Test

- performed if non-stress is abnormal
  - oxytocin is given or nipple stimulation is used and contractions are recorded
  - **Negative:** no late decels of FHR
  - **Positive:** late decels of FHR

contraction stress test: positive/abnormal - late decelerations



### fetus heart rate



woman's contraction

### 8) Hemoglobin and Hematocrit blood lab

- Hgb: <10 and Hct <30% indicates anemia
  - increased risk of low birth weight, preterm delivery, death in utero
- expected to be a bit low during pregnancy due to extra fluids in body
- **Med:** iron supplements + vitamin C

### 9) Kick counts: woman counts fetus movements

- **Teaching:** notify HCP if < 10 kicks in 2 consecutive 2-hour periods

### 10) Nitrazine test

- tests presence of amniotic fluid in vaginal secretions
  - amniotic fluid will turn the paper blue

### 11) Rubella titer / vaccination

- don't give vaccine during pregnancy
- woman CANNOT get pregnant 1 to 3 months after immunization and avoid immunosuppressed people
- rubella vaccine and Rhogam given together may cause vaccine to not be effective
- vaccine may be given post-partum

### 12) UA & CS

- check for glucose and protein at every visit
- glucose may indicate diabetes
- protein level of 2+ to 4+ may indicate infection or pre-eclampsia

### 13) Ultrasound

- checks gestational age and amniotic fluid volume
- have client drink water for better visualization

### Risk conditions during pregnancy

*These conditions put the fetus at risk for respiratory distress, premature birth, low or high birth weight or miscarriage.*

#### 1) Abortion/miscarriage

- **S&S:** >1 pad/hour is considered hemorrhage
- **Med:** give rhogam for Rh neg woman

#### 2) Cardiac Disease/cardiomyopathy

- **Int:** monitor for HF and pulmonary edema, bedrest

#### 3) Diabetes Mellitus

- 1st trimester, woman needs LESS insulin
- 2nd and 3rd trimester woman needs MORE insulin
- After placental delivery, woman needs LESS insulin



#### DIC (disseminated intravascular coagulation)

- **Patho:** bleeding and clots simultaneously can form due to clotting factors getting all messed up when woman is having some other maternal problem like eclampsia or placenta abruption (page 110)
- **Tx:** fix cause!
  - give oxygen, blood replacement, heparin, monitor UO as renal failure is common

# NCLEX® Nursing Nugget Pages



Justine Buick is "The NCLEX Tutor" and founder of KoaPine Tutoring & Test Prep. She has been helping nursing students pass the NCLEX® and nursing exams through online tutoring and her Nugget Pages since 2014. Justine has worked as a med-surg nurse, clinical instructor, and NCLEX prep teacher. She has active R.N. licenses in Hawaii and Massachusetts. Justine is passionate about helping nursing students pass tests!

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