N155 Assessment of the Heart, Great vessels of the neck, and Peripheral Vascular system

- Vessels of the Neck
  - JVD
- Review anatomy/physiology of the heart
  - Heart sounds
  - Cardiac cycle
- Assessment
  - Position client supine
  - Then head elevated at 45 degrees
- Reference Lines
  - Sternal Line
  - Midclavicular Line
  - Axillary Line
- Inspection:
  - Pulsations
  - Symmetry of movement
  - Lifts/heaves
  - Apical Impulse (PMI) (assess location)
    - Locate Fifth ICS, MCL.
    - Visualized in about 50% adults.
      - More visible in children and patients with thin chest walls.
  - Retractions
  - Heaves or lifts (a lifting in the cardiac area; a strong outward thrust of the chest wall and occurs during systole)
- Palpation
  - Apical impulse (PMI point of maximal impulse) indicates how well the left ventricle is working because it corresponds to the apex of the heart.
    - Palpate over the precordium to find the apical impulse
    - Apical impulse may not be the point of maximal impulse which may be felt elsewhere on the chest in pts with cardiac disease
- Auscultation:
  - Stethoscope
    - Diaphragm of the stethoscope – for high pitched sounds – heart sounds
    - Bell - for low pitched sounds – bruits, murmurs
    - Single piece cardiac – soft pressure low pitched sounds = bell
      - Firmer pressure higher pitch sounds = diaphragm
  - Auscultatory Sites
  - Heart Sounds – S1, S2
    - S1: The first heart sound
    - S2: The second heart sound
      - Base (R/L 2nd ICS) → S2 louder than S1
      - Apex → S1 louder than S2
    - Normal physiologic S2 Split
      - Best heard at pulmonic area during inspiration
- Murmurs - Indicates turbulent blood flow
  - Grade I : barely audible
  - Gr II : audible but quiet and soft
  - Gr III : moderated loud, without thrust or thrill
  - Gr IV : loud, with thrill
  - Gr V : louder with thrill, steth on chest wall
Gr VI: loud enough to be heard before steth on chest

- Peripheral Vascular Assessment
  - Skin temp
  - Color
  - Pulses
  - Cap refill
  - Edema
- Pulses
  - Palpate pulse on each side comparing pulse volume and symmetry.
  - Do not palpate the carotid arteries at the same time or press too firmly – pt may faint or become bradycardic. (Vagal stimulation)
  - Check carotid, radial, femoral, popliteal, posterior tibialis and dorsalis pedis
  - Grade on four point scale
    - 4+ bounding
    - 3+ increased
    - 2+normal
    - 1+weak
    - 0 absent
- Capillary refill
  - Should be less than 3 sec; 3-4 sec in elderly pts
- Lower extremities
  - Compare temperature
    - A unilateral cool foot can indicate an arterial problem
  - Should be equal in size
  - Unilateral swelling indicates local problem
- Venous Problems
  - Chronic venous stasis
  - Skin is brown, coarse and thickened
    - Due to hemosiderin deposits (iron product - a by-product of RBC breakdown)
  - Venous ulcers often occur at the medial malleolus
    - Characterized by bleeding and uneven edges
  - Arterial problems
    - Atherosclerosis, hardening and calcification
    - Claudication
    - Coolness, pallor, and dependent rubor
    - Diminished pulses
    - Thin shiny skin
    - Distal gangrene
    - Ulcers, pale ischemic base, well-defined edges and no bleeding
- Edema
  - Depress pretibial area & medial malleolus for 5 seconds
  - Grade pitting edema
  - Subjective
    - 1+ 2cm
    - 2+ 4 cm
  - 3+ 6 cm
  - 4+ 8 cm
- DVT
  - Asymmetry of calves of 1 cm or more indicate may DVT
  - Homan’s sign – unreliable method for assessing DVT – only 35%
  - Assess for warmth, swelling and pain in legs
  - Dorsiflexion should NOT be done if pt has known DVT (may dislodge clot)