

Cardiovascular, Peripheral Vascular & GI Assessment

Nursing Assessment N113
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Objectives

- Identify questions when assessing cardiovascular and peripheral vascular systems.
- Discuss methods utilized for the assessment of cardiovascular and peripheral systems
- Describe characteristics associated with CV and PV systems
- Identify cultural variations related to CV and PV systems
- Discuss CV and PV systems variations in the older adult
- Identify health promotion and client teaching for the CV and PV systems

Cardiovascular Assessment

- Cardiovascular diseases remain the most common cause of death in the US.
- Incorporates data obtained from: observation, auscultation, and palpation – also include patient, family, and medical history

Nursing History

- Nursing history should include both subjective and objective data:
 - > Past medical history/ Current health status
 - > Family History
 - > Chest pain/discomfort
 - > Shortness of breath (SOB)
 - > Dyspnea
 - > Palpitations
 - > Fainting/syncope
 - > Fatigue
 - > Peripheral skin changes example: edema

Questions to Obtain Information on Symptoms

- How long have you had this symptom(s)?
- How much does it bother you?
- Does any particular incident or episode trigger the symptom?
- How does it affect your life style?

Questions to Obtain Information on Symptoms

- What activities or interventions alleviate the symptoms?
- What do you think is causing the problem?
- How far can you walk?
- What muscle groups hurt and what measures relieve the pain?

PMH Questions Will Include the Following Areas

- Childhood and infectious diseases
- Major illness & hospitalizations

Continued.....

- Medications: prescription and OTC
- Life style & social history

Physical Assessment

- Obtain objective data by:
 - Inspection, palpation, and auscultation
- Recommended order of assessment is cephalocaudal (head to toe).

General Appearance

- Assessment will include:
- LOC:
- Behavior:

Blood Pressure

- Vital signs
- Blood pressure: some variance is expected in different extremities
- Orthostatic hypotension: Lying down, Sitting, and Standing – include HR

Head and Neck

• Assess

- > Lips, ear lobes and buccal mucosa; note any deviations: **cyanosis – bluish tinge**

• Examine neck veins

(Internal and External Jugular):

- > With HOB elevated
- > Assess for pulsation and distension
- > Bilateral jugular vein distension (JVD)



Head & Neck continued

- ◉ Assess Carotid Arteries:
 - > Auscultate for a **bruit**
 - > Palpate for a **thrill**

Inspection & Palpation of the Precordium

- ◉ Have pt assume a supine position
- ◉ Assess for:
 - > size, shape, symmetry of movement and any pulsations
- ◉ Pulsations along the left sternal border
 - > should be confirmed with palpation

Right Side Heart Enlargement



Continued.....

- ◉ Pulsation (lift) is observed **lateral to the apex (MCL & 5th ICS)**



Auscultation of the Heart

- ◉ Examine pt in a warm and quiet place
- ◉ Elevate HOB 30-45 degrees
- ◉ Start from the **Base** of the heart (2nd right ICS) to the **Apex** (5th ICS & L MCL):
 - > (Mnemonic: APE To Men) (aortic, pulmonic, Erb's, tricuspid, mitral (apical))

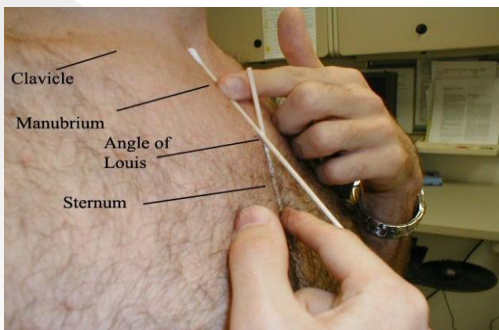
Auscultation of the Heart

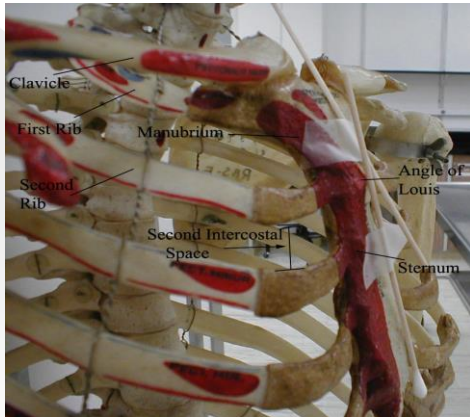
- ◉ Auscultate:
- ◉ Rate
- ◉ Intensity (soft or loud)
- ◉ Rhythm (regular or irregular)
 - > presence of extra sounds (murmurs, rubs)

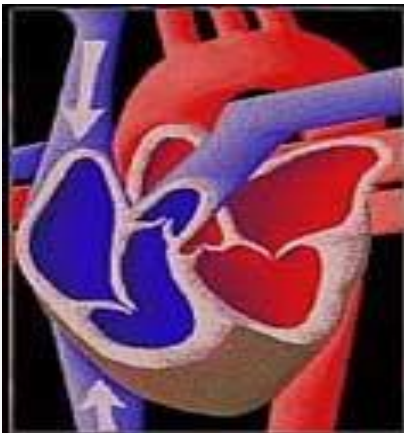
Auscultation of the Heart

- ◉ Auscultatory Areas
 - > 2nd right ICS – Aortic valve
 - > 2nd left ICS – Pulmonic valve
 - > 3rd left ICS – Erb's point
 - both S1 & S2 heard well
 - > 5th left ICS – Tricuspid valve
 - > 5th left ICS , MCL – Mitral valve

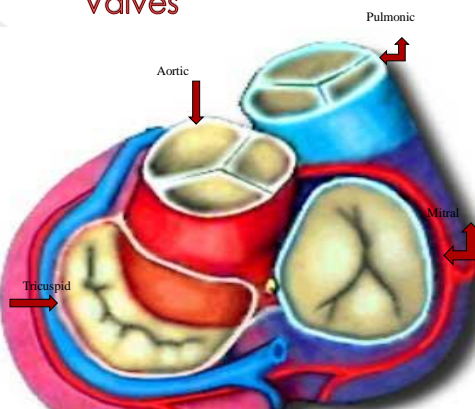
Angle of Louis







Valves

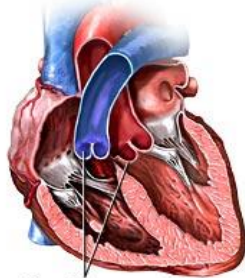


First heart sound, "lub", occurs when atrioventricular valves close



Atrioventricular valves

Second heart sound, "dup", occurs when semilunar valves close



Semilunar valves

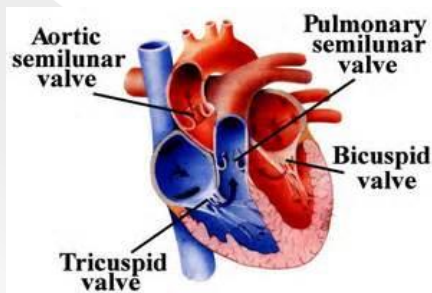
ADAM

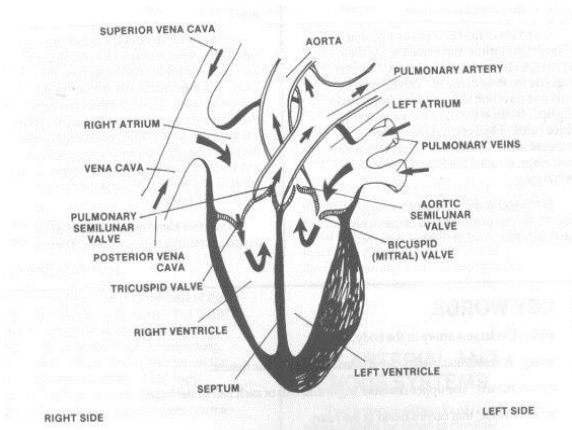
Heart Sounds Resources

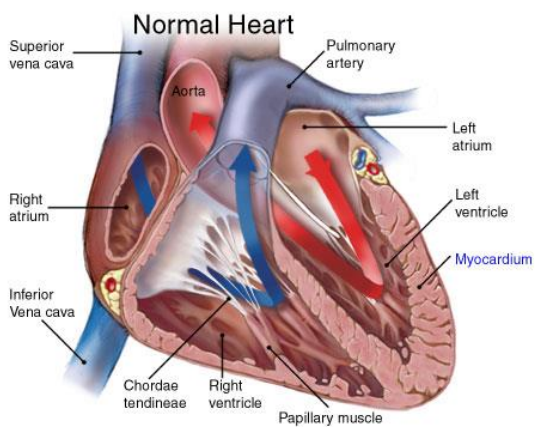
• University of Washington Department of Medicine Advanced Physical Diagnosis
<https://depts.washington.edu/physdx/heart/demo.html>

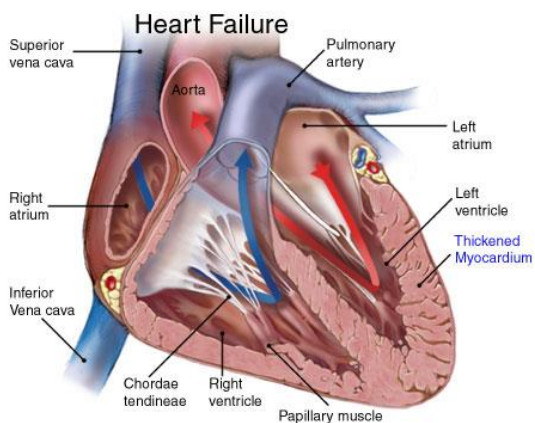
• Easy Auscultation
<http://www.easyauscultation.com/heart-sounds>

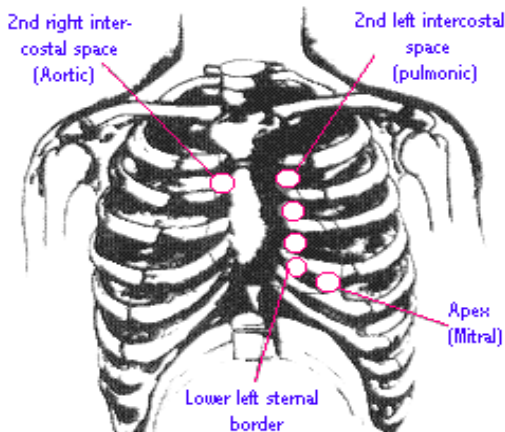
Valves





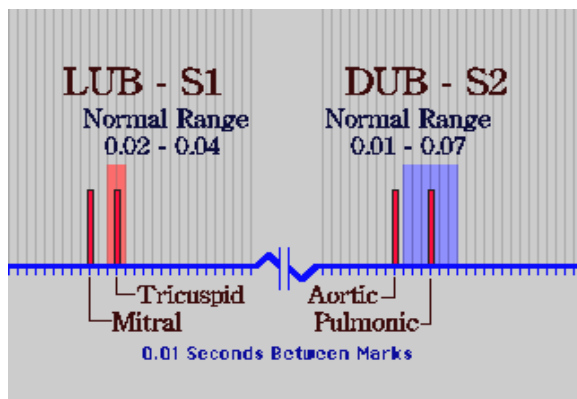






Continued.....

- ◉ 1st sound heard (S1):
- ◉ Closure of the mitral and tricuspid (AV valves)
 - > "Lub" heard best at the apex (use diaphragm of the stethoscope)
 - > Systole phase, ventricles contract, 1/3 of cardiac cycle
- ◉ 2nd sound heard (S2):
 - > Closure of the aortic & pulmonic (SL valves), heard best at the base with diaphragm of the stethoscope "dup"
 - > Diastole phase, ventricles relax & fill with blood, 2/3 of the cardiac cycle



Cardiovascular Deviations

◉ S3

- > Occurs when ventricles are resistant to filling in early diastole
- > Normal finding in children and younger adults but pathological in those over 30yrs (may indicate left ventricular failure or mitral valve regurgitation)

◉ S4

- > Occurs in later diastole immediately before S1
- > The ventricles resist to filling (may indicate CAD, LVH, or aortic stenosis)

Cardiovascular Deviations

- ◉ Pulsations
- ◉ Displace PMI
- ◉ Bounding Abdominal Pulse

Cardiovascular Deviations

- ◉ Abnormally high pressure in the right side of the heart:
- ◉ Abnormally high pressure in the left side of the heart:

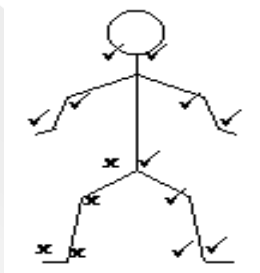
Variations in Older Adults

- ◉ With no disease, heart size remains same throughout life
- ◉ Decreased cardiac output and contraction strength leading to reduced activity tolerance
- ◉ Heart rate returns to resting rate much slower after activity
- ◉ Sudden emotional & physical stress may result to arrhythmias and heart failure

Older Adults Variations Cont.

- ◉ Possible age- related downward displacement of the heart (PMI auscultation @ 6th ICS)
- ◉ Arteries may be palpated more easily due to loss of supportive tissues
- ◉ Systolic and diastolic BP increase
- ◉ Peripheral edema r/t venous insufficiency

Peripheral Vascular System (PVS)



Questions to Obtain Peripheral Vascular Nursing History

- ◉ When did you first notice any changes?
- ◉ Do you wear any prosthesis and do they fit properly with no pressure points?
- ◉ Clients with venous insufficiency

Assessing the PVS

- ◉ Inspect lower extremities
- ◉ Palpate skin temperature
- ◉ Check for calf tenderness
- ◉ Check peripheral pulses by palpating and compare pulse on both sides

PVS Assessment continued

- ◉ Assess ROM and muscle strength
- ◉ Note the:
 - › rate, rhythm, intensity, symmetry of pulse volumes

Grading of Peripheral Pulses

- ◉ Grading of the intensity/
strength of pulses
 - 0** - No pulse–
(Please see instructor)

Grading of Peripheral Pulses

- ◉ Grading of the intensity/
strength of pulses continued
 - 0** = absent
 - 1+** = weak/thready
 - 2+** – Normal
 - 3+** – Strong pulse
 - 4+** - Full/bounding pulse

Deviations From Normal

- ◉ Peripheral Pulses
 - > Pulses asymmetrical
 - > Diminished/weak/thready pulse
 - > Bounding pulse

Deviations From Normal cont.

- ◉ Peripheral Veins
 - > Tenderness on palpation
 - > Swelling of one calf or leg

Deviations From Normal

- ◉ Peripheral Perfusion
 - Cyanosis, marked edema, indicates venous insufficiency
 - > Skin thin, shiny or thick, waxy shiny fragile, reduced hair and ulceration may indicate both venous or arterial insufficiency

Deviations From Normal

- ◉ Peripheral Perfusion
 - > Nonpitting edema feels hard to touch and no indentation when firm pressure is applied on skin over the tibia or the medial malleolus for 5sec

Deviations From Normal

- Peripheral Perfusion cont.
 - If Pitting edema is present, it is graded as
 - 1+ - (2mm) mild pitting, slight indentation
 - 2+ - (4mm) moderate pitting, indentation resolves rapidly
 - 3+ - (6mm) Deep pitting, indentation remains for a short time and leg appears swollen
 - 4+ - (8mm) Very deep pitting, indentation lasts a long time, leg very swollen.

Edema



Capillary Refill Test



- Capillary Refill Test
 - If fingernail or toenail squeezed to cause blanching: if it does not return to normal color in 3 seconds then, peripheral insufficiency indicated.

Cultural Considerations

- Major high risk factors for heart disease and stroke include:

Cultural Considerations

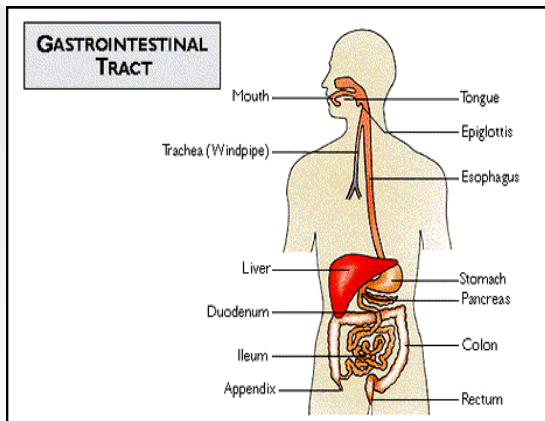
- African American, Puerto Ricans, Cubans and Hispanics have a higher incidence of hypertension than Caucasians
- Hispanics in the U.S. have three times the risk of developing diabetes as do non – Hispanic Caucasians

Variations in Older Adults

- Decreased effectiveness of blood vessels
- Proximal arteries thinner and dilate
- Peripheral arteries are thicker & dilate less effectively
- Blood vessels lengthen and more tortuous & prominent.

Health Promotion and Maintenance

- ◉ Balanced diet
- ◉ Exercise
- ◉ Annual Check ups
- ◉ Compliance with medication/ health and wellness regimes
- ◉ Community support groups for health resources
- ◉ Strategic Community Education and Interventions



Gastrointestinal System Assessment

- ◉ Nursing History
 - > Changes in: appetite, weight
 - > Difficulties swallowing (dysphagia)
 - > Any food intolerance
 - > Abdominal pain
 - > Any nausea and vomiting
 - > Bowel habits

Gastrointestinal System Assessment

- ◉ Nursing History cont.
 - > Past abdominal history
 - > Medications/
alcohol/smoking
 - > Nutritional assessment

GI Assessment: Oral Cavity Inspection

- ◉ Inspect lips:
- ◉ Visualize areas of mouth
- ◉ Oral mucosa: redness, pallor, swelling, ulcer
 - Gums
 - Teeth:
 - Tongue:
 - Pharynx:

Assessment

- ◉ The two methods of subdividing the abdomen:
 - 4 quadrants or 9 regions
- ◉ Advise client to void before assessment
 - Promotes comfort during assessment
- ◉ The abdomen is assessed by:
 - inspection, auscultation, palpation and percussion

Inspection & Auscultation: Normal Findings

- ◉ Skin:
 - Unblemished skin, uniform color, silver white striae
- ◉ Contour and symmetry:
 - Flat, rounded, WNL liver & spleen size, symmetric contour

Inspection & Auscultation: Normal Findings

- ◉ Abdominal movements:
- ◉ Vascular pattern:
 - not visible
- ◉ Audible bowel sounds:
 - (normal), no arterial bruits, no friction rub

Deviations from Normal

- ◉ Presence of rash /lesions on the skin
- ◉ Tense glistening skin
- ◉ Purple striae
- ◉ Distention
- ◉ Liver or spleen enlargement

Deviations from Normal

- ◉ Asymmetric contour:
 - Hernia or tumor
- ◉ Visible peristalsis
- ◉ Visible venous patterns associated with liver disease



Variations

- ◉ Auscultate all 4 quadrants:
auscultate each quadrant for approximately 5 minutes.
 - Loud bruit
 - Hyperactive BS
 - Hypoactive BS
 - Absent BS

Palpation: Normal findings

- ◉ No tenderness, relaxed abdomen with smooth, consistent tension
- ◉ On deep palpation tenderness near xiphoid process, over cecum, over sigmoid colon
- ◉ Liver may not be palpable, borders feel smooth
- ◉ Bladder not palpable

Deviations on palpation

- ◉ Tenderness and hypersensitivity, muscle guarding,
- ◉ Generalized or localized tenderness, mobile or fixed masses
- ◉ Liver enlargement, smooth but tender-nodular hard
- ◉ Distended and palpable tense mass indicate urine retention

Cultural variations

- ◉ High lactose intolerance 70 - 90% among African Americans, Native Americans, Asians and Mediterranean groups

Variations in the Older Adult

- ◉ Increased adipose tissue and decreased muscle tone resulting to rounded abdomen
- ◉ Muscle wasting and loss of fibroconnective tissue
- ◉ Higher pain threshold
- ◉ Slower peristalsis, less frequent BM

Variations in the Older Adult

- ◉ High incidence of colon cancer
- ◉ Decreased medication absorption
- ◉ Decreased salivation
- ◉ Gastric acid secretion decreases

Health Promotion and Maintenance

- ◉ High fiber diets with high quantity of raw fresh foods/ balanced diet
- ◉ Teach effects of the gastrocolic & duodenocolic reflexes facilitation with bowel elimination - initiated by food (more active with 1st meal) entrance to stomach and duodenum.

Health Promotion and Maintenance

- Annual Health Exams/ Screening
- Exercise
- Education
- Remain up to date with research
