Physical Examination - Cardiovascular

General

- introduce your self
- Permission
- Environment (private / warm / well lit)
- Chaperone
- Hand hygiene
- Equipment

Position: semi-sitting 45

Exposure: above the waist

First impression: (foot of the bed)

- General look (patient is looking well / sitting comfortably / not in pain / not in distress / not breathlessness / not cyanosied)
- COA to time / place / person
- Not cachestic / not overweight
- No medical equipment
- Features of Marfan, Turner, Down and Ankylosing spondylitis
- Skin surface for petechiael rash
- Vital signs (RR / BP / Temp / O2 saturation / HR / BMI) + urine analysis

Face:

- Eyes: xanthelasmata (if present check for patellor and Archilles tendon xanthemata) / corneal archus / pallor / conjuctival petechiael rash

- Fundoscopy for DM and HTN changes / Roth spots
- Mouth: Central and peripheral cyanosis / dental hygiene
- Malar flush

Hands:

Inspection:

- Nails: clubbing / splinter hemorrhage / cyanosis / tar staining
- Palms: oslers nodes / janeway lesions / pallor / xanthomata / palmar erythmea / petechiael rash
- Dorsum: petechiael rash / xanthomata again
- tremor (fine + flapping)
- Signs of IV drug abuse

Palpation:

- temperature (warm vs cold / dry vs wet)
- Capillary refill
- Pulses

Pulses:

Radial pulse: (3 fingers lateral to flexor carpi radialis tendon)

- Rate (BPM)
- Rythm (regular)
- Compressible and not cord like
- Radio - radial delay
- Radio - femoral delay - skip
- Collapsing pulse - ask about shoulder pain - use the base of the fingers
- Pulse deficit - palpate the radial then auscultate using diaphragm at apex - difference should be less than 10

Brachial pulse: (2 fingers lateral / right to right / medial to biceps tendon)

- Good volume
- Normal character
- Rate and rhythm if not done previously
- Measure BP

Carotid pulse: (2 fingers lateral / right to left / below angle of jaw, anterior to SCM)

- Good volume
- Normal character
- Bruit - using diaphragm - hold breath in inspiration

Should asses LL pulses

- Femoral - skip
- Popliteal
- Dorsalis pedis
- Posterior tibial

JVP: - you need ruler and torch

Position: semi-sitting at 45, head resting on a pillow and tilted slightly toward the left

Exposure: above the waist

- using a torch on an angle to see JVP - above the clavicle, behind SCM
- 2 inwards waves per pulse - vs carotid inward
- Decreases with inspiration
- Decreases with sitting 90
- Increases with lying flat

warm hands / pain / permission, then:

- Impalpable - vs carotid palpable
- Disappears with pressure at the root of the neck
- Increases with abdominojugular reflex - ask about pain - 10 to 30 seconds

- Ruler on the sternal angle perpendicular to the floor
- Add 5 cmH2O
- Normal = 8-9
- Finally: check for pulmonary edema, pleural effusion, ascites, peripheral edema

Preicordium: you need torch and stethoscope

Position: semi-sitting 45

Exposure: above the waist

Inspection:

From foot of the bed:

- shape / contour: elliptical
- Symmetry, moves with respiration
- Breathing pattern
- Deformities (pectus carinatum / pectus excavatum)

Right side of bed:

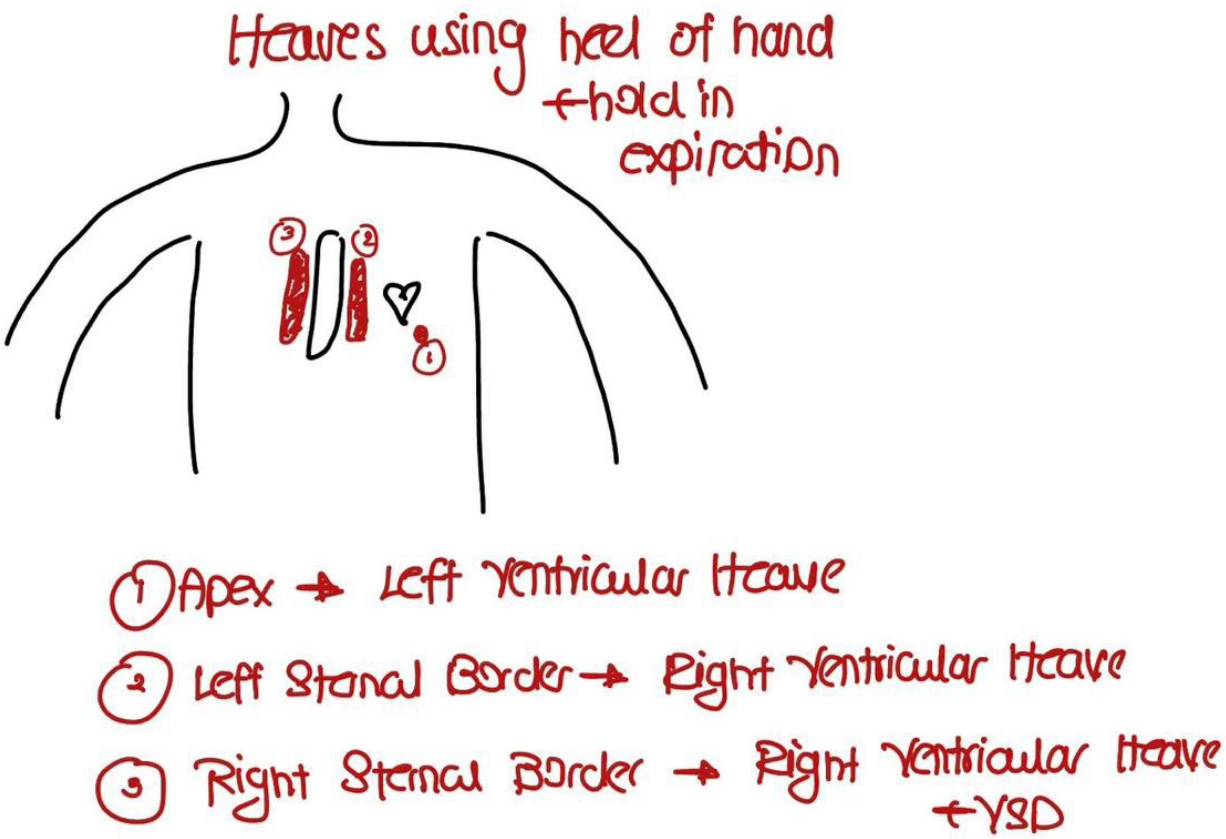
- Normal hair distribution
- No scars
- No implantable devices
- No dilated veins
- No skin discoloration / visible masses / swellings
- No visible pulsation / apex beat - use torch

- No skin lesions

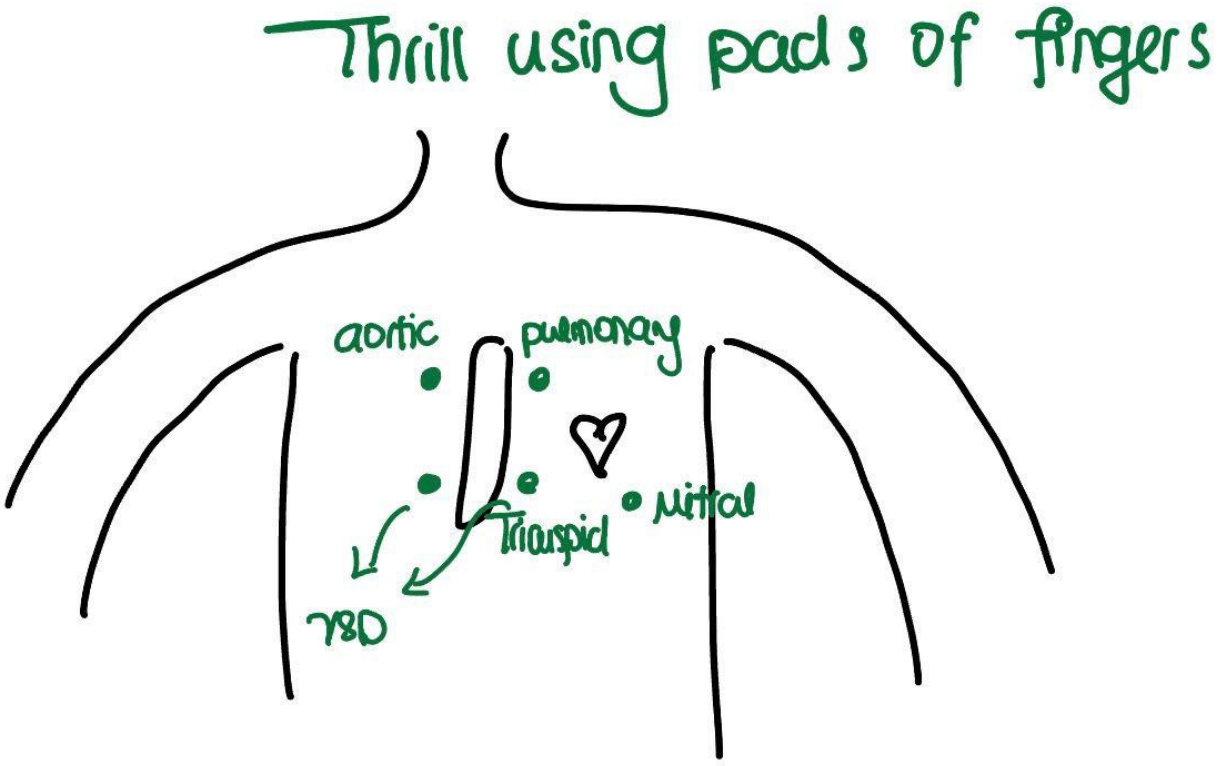
Palpation:

- Apex beat - fifth intercostal space, mid clavicular line, gently tapping
  if not felt roll to the left

- Heaves - heel of the hand - hold in expiration
  apex ((say no LHV))
  left and right lower sternal border ((say no RVH)



- Thrills - flat of fingers
  1- right 2nd IC - Aortic
  2- left 2nd IC - Pulmonary
  3- right 4th IC - VSD
  4- left 4th IC - tricuspid
  5- apex + mitral



Auscultation:

- 4 valves areas + fingers on carotid - diaphragm
- Apex (mitral stenosis, S3, S4) - Bell
- Apex with roll to the left (Mitral Stenosis) - Bell
- LLSB (tricuspid stenosis, Rt sided S3 in RV failure) - Bell
- Axilla (Mitral regurgitation) - Diaphragm
- Hold in inspiration
  Carotid (Aortic stenosis) , mention carotid bruit - Diaphragm
- Lean forward + hold in expiration - Diaphragm
  Aortic (Rt 2nd IC) + Erbs point (Lt 3rd IC)
  both for aortic regurgitation
- Comment on:

S1 / S2 / splitting of S2
Rate and Rythm
No added sound (S3 / S4 / Opening sound / ejection click / pericardial rub / knock)
No murmurs

- Finally say:
  I want to auscultate for crackles
  check for hepatospleenomegaly / ascites / sacral edema / lower limb edema / ulcers / pulses

Lower Limb:

Position: Flat / Dependent / 45 degree
Exposure: Lower Limb + Abdomen

Inspection:

Standing:

- Dilated veins / varicose vein
- Edema
- Skin color changes

Flat:

- Thin Shiny Skin
- Hair distribution
- Ulcer
- Color changes
- Superficial dilated veins
- Venous guttering
- Nails: thick brittle nails / onychomycosis
- Muscle Wasting - calf circumference 10 cm below tibial tuberosity - compare bilateral
- Between Toes - fungal infection

- Elevate legs - inspect heels for ulcers (pressure)
- If ulcer comment on: site / size / margin (regular or irregular) / depth / base of ulcer (granulation or necrotic tissue) / surrounding skin

Palpitation: - hand hygiene / warm hands / pain / eye to eye contact / compare same level bilateral

- Muscle Tenderness - calf
- Temperature - using dorsum of the hand
- Edema - pitting or non-pitting, press on skin using thumb
- Capillary Refill - normal < 2
- Pulses
  Femoral: (only mention)
  against femoral head midinguinal point - middle + neck
  Radio - femoral delay
  Auscaultate for bruit using diaphragm

  Poplitial:
  Knee flexion 30 degree
  Both thumbs on tibial tuberosity
  Other fingers in papliteal fossa
  Should impalpable, if palpable = aneurysm

  Posterior Tibial: - pads of middle three fingers
  2 cm below and medial to medial malleouls
  rate / rythm / volume / character

  Dorsalis Pedis: - pads of middle three fingers
  Lateral to extensor hallicus longus
  rate / rythm / volume / character

Special Tests:

1- ABPI - only mention

Normal > 1

Abnormal < 0.9

2- Burgerrs Test

- supine position
- Elevate legs 45 degree from 2-3 minutes
- Look for pallor + venous guttering Nails
- Patient set up + handle legs from end of the bed and look for reactive hyperemic
- Positive if pallor + venous guttering when elevated and redness when sit up

DVT Exam:

General Inspection:

- Stable / breathless / pain
- Vital signs
- DVT risks factors: pregnancy / immobility / bed-ridden / cast / signs of trauma / surgery

Leg Examination:

inspection: while patient is sitting

- skin + color changes
- Swelling - compare bilateral, level of swelling
- Venous Dilation

Palpation:

- Tenderness
- Temperature
- Edema - pitting or non-pitting