

Introduction

- Wash hands, Introduce self, ask Patient's name & DOB & what they like to be called, Explain examination and get consent
- Expose and sit patient at 45°

General Inspection

- **Patient:** stable, comfortable, alert, pain/distress, breathlessness, pallor, cyanosis, how many pillows
- **Around the bed:** oxygen, medication, IV drips, ECG machine

Hands

- **Perfusion:** temperature, capillary refill, peripheral cyanosis
- **Nails:** clubbing (cyanotic congenital heart disease, IE), splinter haemorrhages (IE), Quincke's sign (visible pulsation of capillary bed) (aortic regurgitation)
- **Palms:** extensor tendon xanthomata (hyperlipidaemia), Osler's nodes (IE), Janeway lesions (IE)

Pulse and BP

- Radial pulse: rate (tachycardia >100, bradycardia <60), rhythm (irregularly irregular = AF/ventricular ectopics; regularly irregular = 2nd degree heart block), radio-radial delay and radio-femoral delay (aortic dissection/coarctation, aortic arch aneurysm)
- Collapsing pulse (ask pain first! Hold arm straight, palpate brachial and radial pulses simultaneously and lift arm upwards fast. In a collapsing pulse, the first 3-4 pulsations feel much stronger) (aortic regurgitation, patent ductus arteriosus, AV malformations)
- Blood pressure: both arms, postural drop (>20mmHg drop = postural hypotension; large pulse pressure = aortic regurgitation; narrow pulse pressure = aortic stenosis)

Head and Neck

- **Face:** pallor (anaemia), malar flush (mitral stenosis), ruddy plethoric complexion (polycythaemia), swollen cyanotic face (SVC obstruction)
- **Eyes:** conjunctiva for pallor (anaemia)/haemorrhages (IE), corneal arcus, xanthlasma (hyperlipidaemia)
- **Mouth:** central cyanosis under tongue, moist mucous membranes (dehydration), petechial haemorrhages (IE), poor dental hygiene (IE), high arched palate (Marfan's)
- **Neck**
 - JVP height and waveform: turn head slightly and look for pulsation of the internal jugular vein which runs from the earlobe downwards. If you can't see it, perform the hepatojugular reflux test (apply pressure over RUQ) to see a transient JVP rise which confirms it is below clavicle (raised JVP = PQRST: Pulmonary hypertension/PE/pulmonary stenosis/pericarditis/pericardial effusion, Quantity of fluid i.e. overload, RHF, SCV obstruction, Tamponade/tricuspid regurgitation)
 - carotid pulses character and volume (slow rising low volume = aortic stenosis; bounding/collapsing = aortic regurgitation or patent ductus arteriosus; thrills = aortic stenosis or atheroma)
- **(Others:** Corrigan's sign (visible carotid pulsation) (aortic regurgitation), de Musset's sign (head bobbing in time with pulse) (aortic regurgitation))

Chest

- **Inspection:** chest deformities (pectus excavatum/carinatum), scars (midline sternotomy, thoracotomy, pacemaker scar near left shoulder), visible apex beat, distended veins over precordium (SVC obstruction)
- **Palpation:**
 - apex beat position: use whole hand, then localise to a finger. Now count down with the other hand (impalpable = obese, muscular or hyperinflated chest; displaced = LV dilation e.g. mitral regurgitation or tension pneumothorax)
 - apex beat quality (heaving = outflow obstruction e.g. aortic stenosis or systemic hypertension; thrusting = volume overload or LVH; tapping = mitral stenosis)
 - heaves: place left whole hand over left parasternal area and the right whole hand over the apex (parasternal heave = RV hypertrophy e.g. mitral stenosis)
 - thrills: feel over valve areas with medial border of hand (aortic stenosis most common)
- **Auscultation:** auscultate all heart valves while palpating carotid artery (use the diaphragm unless otherwise stated). Note added sounds e.g. clicks, snaps, gallops, rubs, extra heart sounds (S3 = LVF, mitral regurgitation, under 30; S4 = LVH, hypertension, aortic stenosis), murmurs (if murmur heard, note: site, pulse timing, character, volume, grading, radiation):
 - mitral valve: listen with patient lying (feel apex beat first and place stethoscope over it) **then** roll patient onto their left side (accentuates) **then** listen in the left axilla for radiation (mitral regurgitation) **then** listen with bell (while patient still rolled over) on expiration (mitral stenosis low tones)

- tricuspid valve
- pulmonary valve
- aortic valve: listen with patient lying **then** sit patient up and forward and listen between rib 2 and 4 on left sternal edge on expiration (**accentuates aortic regurgitation**) **then** listen over right carotid artery for radiation (also check bruits while here) (**aortic stenosis**)

NB. Right valves heard better at height of inspiration, left valves at height of expiration. Never put stethoscope on top of breast – listen in inframammary fold.

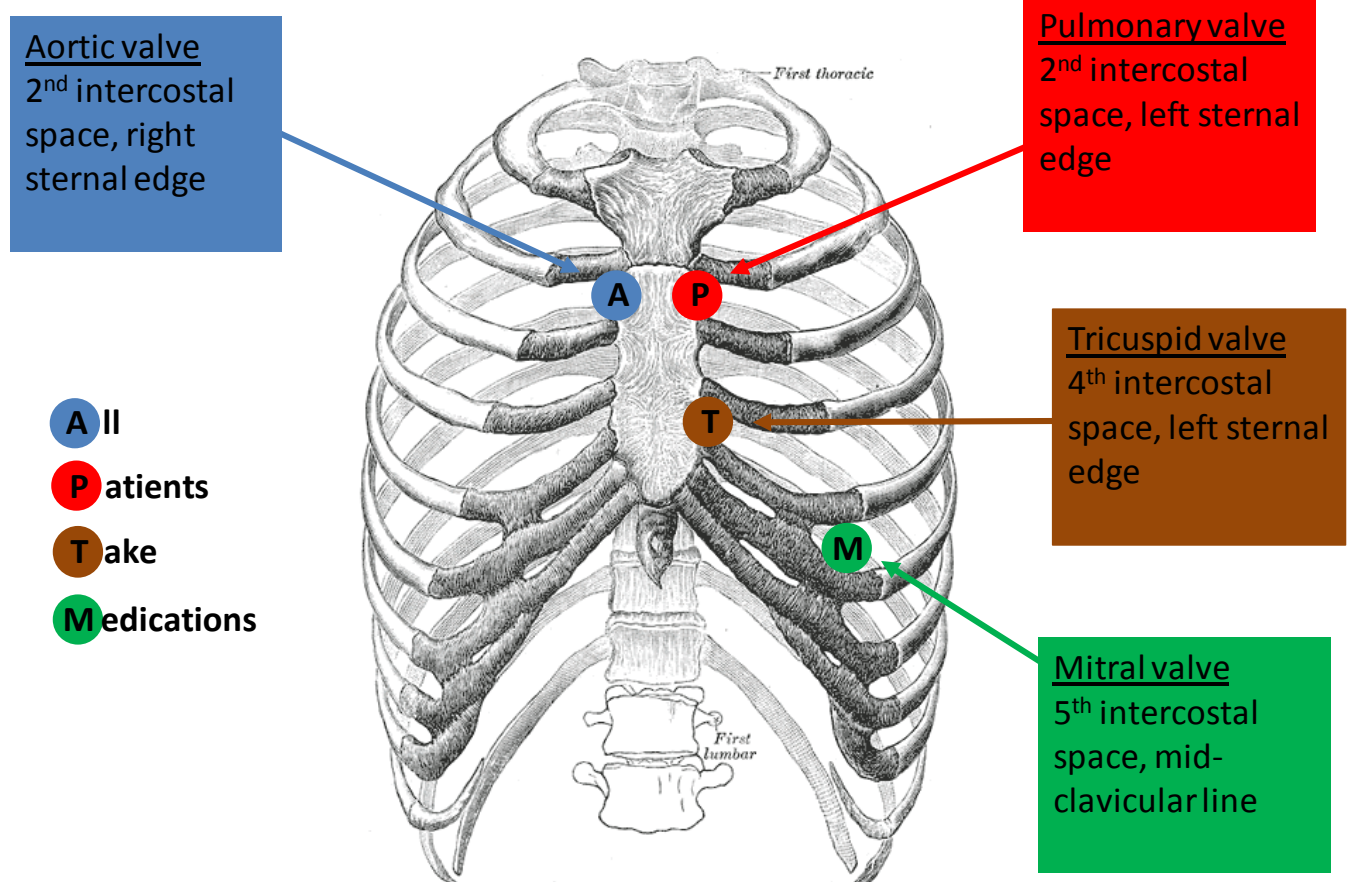
NB. Systolic murmurs (e.g. mitral regurgitation; aortic stenosis) radiate. Diastolic murmurs (e.g. mitral stenosis; aortic regurgitation) are quiet and need a manoeuvre to accentuate them.

Finally

- Auscultate lung bases for fine crackles (**pulmonary oedema**) (while patient is still sitting from last test)
- Ankle oedema: push on tibia for >10s then run finger over to feel for indent (**RVF, hypoalbuminaemia**)

To Complete exam

- Thank patient and cover them
- “To complete my examination, I would examine for peripheral pulses, feel for hepatomegaly (**RVF**) and look at observation charts”
- Summary and suggest further investigations you would do after a full history

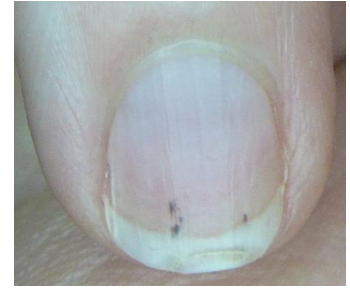




Peripheral cyanosis



Nail Clubbing



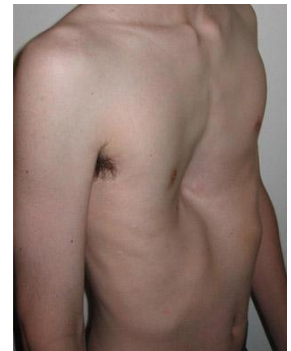
Splinter haemorrhages:
small haemorrhages under the nails form thin red lines parallel to the direction of nail growth



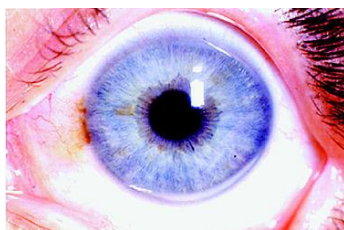
Osler nodes: Painful Purple Papules on finger Pulp (and also on thenar/hypothenar eminences)



Janeway lesions: painless erythematous/haemorrhagic macules on palms and soles



Pectus excavatum:
sunken chest – may be congenital or develop at puberty



Corneal arcus: lipid infiltration around the cornea



Peripheral oedema



Pectus carinatum:
protrusion of sternum – may be congenital, post-surgical or develop at puberty