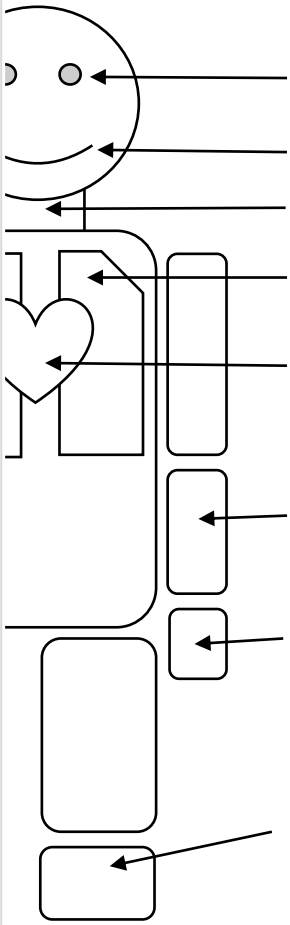
Cardiovascular System Examination

- ❑ Position patient reclined in chair or bed (ideally 45-degrees)
- Hands/Arms
  - ❑ Feel temperature and cap refill at fingertips.
  - ❑ Check nails for splinter haemorrhages, clubbing (hypoxemia), spoon nails (anaemia)
  - ❑ Radial pulses – Rate, rhythm, compare sides, water hammer?
  - ❑ BP in both arms, sitting and standing
- Head
  - ❑ Face – Flushed red cheeks, cholesterol lumps, pale conjunctiva, cyanosed tongue, dental caries.
  - ❑ Jugular venous pressure – Right sided HF, fluid overload
- Chest
  - ❑ Look at chest – scars, pacemaker, defib,
  - ❑ Listen to heart sounds (see over)
  - ❑ Listen for lung sounds – basal crackles could mean pulmonary oedema?
  - ❑ Look for ankle/foot/leg oedema. How high?
- History
  - ❑ Any chest pain or discomfort? Ever? Describe it. When does it happen? What helps?
  - ❑ Any palpations or fluttering in chest?
  - ❑ Any known heart history?
  - ❑ Any family history of MI, Stroke, Heart Failure
  - ❑ Any breathlessness on exertion? Any pattern to it?
  - ❑ Any dizziness on standing, or first thing in morning?
  - ❑ Any breathing issues laying down?
  - ❑ Diet, exercise, smoking, drugs, known issues?

Cardiovascular Quick Aide Memoire



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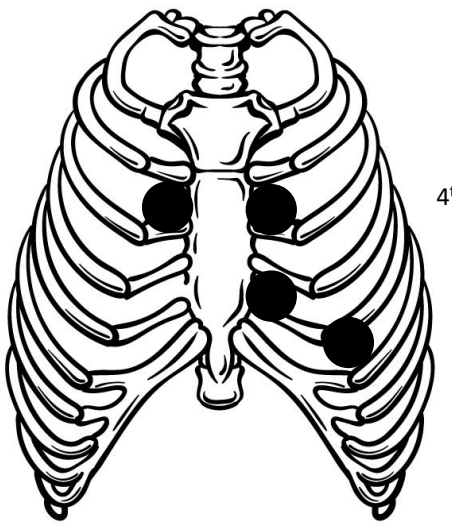
Heart Valve Sounds

Also listen to rate and rhythm

Aortic Valve
2nd, sternal margin
Right Side

Pulmonary Valve
2nd, sternal margin
Left Side



Tricuspid Valve
4th, sternal margin
Left Side

Mitral Valve
5th mid-clavicular

Palpate the carotid at the same time to help identify the sounds. Listen for anything that isn't a Lub-Dub. Any whoosh, click or tinkle should be noted to add to your notes.

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Possible Causes of Chest Pain

Differentials	Classical history	Classic examination findings
ACS	•Crushing central chest pain •Radiates to neck/left arm •Associated nausea/SOB/sweatiness •Cardiovascular risk factors	•May be normal •General: sweaty, SOB, in pain •CVS: S4 gallop, JVP distension, signs of heart failure, brady/tachycardic
Aortic dissection	•Tearing chest pain of very sudden onset •Radiates to back •Pain in other sites e.g. arms, legs, neck, head	•Unequal arm pulses or BPs •May be acute aortic regurgitation •May be new neurological symptoms due to involvement of carotid/vertebral arteries
Pericarditis	•Retrosternal/precordial pleuritic chest pain •Relieved by sitting forward •May radiate to trapezius ridge/neck/shoulder •Viral prodrome common	•Pericardial rub (stepping in snow) •Tachycardia •JVP distension and pulsus paradoxus may indicate tamponade
Myocarditis	•Chest pain •Palpitations •Fever •Fatigue •Dyspnoea	•Signs of congestive cardiac failure •Soft S1, S4 gallop •Fever •Tachypnoea
Other cardiac differentials	Stable angina; tamponade; mitral valve prolapse; pulmonary hypertension; aortic stenosis; arrhythmias	

Differentials	Classical history	Classic examination findings
Anxiety/panic attack	•Tight chest pain, SOB, sweating, dizziness, palpitations, feeling of impending doom •Anxious personality & other symptoms of generalized anxiety disorder •Recurrent episodes triggered by a stimulus (e.g. crowds)	•Usually normal •May be hyperventilation
Oesophageal spasm	•Intermittent crushing sub-sternal pain •Relieved by GTN •Associated dysphagia	•Normal
Other differentials	Gastritis; peptic ulcer disease; acute cholecystitis; gastritis; pancreatitis; fibromyalgia; Tietze syndrome	

Pulmonary embolism	•Pleuritic chest pain •Dyspnoea •Haemoptysis •Risk factors (long haul flight, recent surgery, immobility)	•CVS: tachycardia, JVP distension, RV heave, loud P2, right S4 •RS: tachypnoea, clear chest •CALVES: look for DVT •SBP<90/pulselessness/persistent bradycardia = "massive PE"
Pneumonia	•Fever •Shortness of breath •Productive cough •Pleuritic chest pain •Confusion	•Tachypnoea, cyanosis •Coarse crepitations and bronchial breathing •Dullness to percussion •Increased vocal resonance/tactile vocal fremitus
Pneumothorax	•Sudden onset pleuritic chest pain •May be SOB if large •Risk factors e.g. Marfan's appearance, COPD/asthma	One sided chest symptoms: •Reduced chest expansion •Absent breath sounds •Hyperresonance Tension pneumothorax •JVP distension, hypotension •Tracheal deviation (away from affected side)
Pleurisy	•Pleuritic chest pain •May be: dry cough, fever, dyspnoea	•Pleural rub
Differentials	Lung cancer	

Musculoskeletal	•Sharp chest pain •Exacerbated by movement and inspiration •Can point to where it is worse •Exacerbated by pressure over area	•Tenderness over area of pain •Normal exam otherwise
Costochondritis	•Costosternal joint pain •Worse with coughing, twisting and physical activity	•Tenderness at sternal edges •Normal exam otherwise
Gastro-oesophagleal reflux disease	•Retrosternal burning chest pain •Related to meals, lying, straining •Water brash	•Usually normal •May be epigastric tenderness if associated gastritis