

# CLINICAL SKILLS & EXAMINATIONS

NOTES

**FOURTH EDITION**

PRE-SUMMARIZED  
READY-TO-STUDY  
HIGH-YIELD NOTES

FOR THE TIME-POOR  
MEDICAL, PRE-MED,  
USMLE OR PA STUDENT



PDF



168 PAGES

## A Message From Our Team

Studying medicine or any health-related degree can be stressful; believe us, we know from experience! The human body is an incredibly complex organism, and finding a way to streamline your learning is crucial to succeeding in your exams and future profession. Our goal from the outset has been to create the greatest educational resource for the next generation of medical students, and to make them as affordable as possible.

In this fourth edition of our notes we have made a number of text corrections, formatting updates, and figure updates which we feel will enhance your study experience. We have also endeavoured to use only open-source images and/or provide attribution where possible.

**If you are new to us, here are a few things to help get the most out of your notes:**

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## **Table Of Contents:**

**What's included:** Ready-to-study clinical examination guidelines of each of the major bodily systems presented in succinct, intuitive and richly illustrated downloadable PDF documents. Once downloaded, you may choose to either print and bind them, or make annotations digitally on your iPad or tablet PC.

### **CONTENTS: (CLICKABLE HYPERLINKS)**

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**THE CARDIOVASCULAR EXAMINATION**

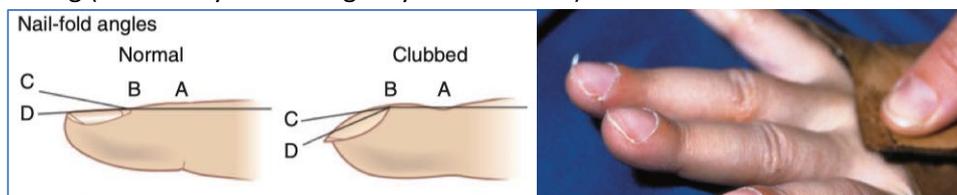
## THE CARDIOVASCULAR EXAMINATION

### THE FULL CARDIO EXAM:

- **Introduction + Consent + Wash Hands**
- **General Inspection:**
  - o Body Habitus:
    - Cardiac Cachexia (Portal Hypertension/RHF)
    - Obesity (Diabetes/Dyslipidaemia/Poor Diet)
  - o Alert & Orientated?
  - o Dyspnoea/Respiratory Distress (CCF, Pulmonary Hypertension, Cor-Pulmonale, MI)
  - o Discomfort/Pain (Angina, MI, Pericarditis, Tamponade)
  - o Diaphoresis (Angina, MI, Pain)
  - o Chest Deformities/Surgical Scars (CABG, Valve Repairs)



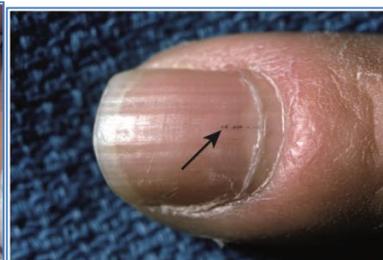
- Congenital Facies (Marfan's, Down's, Turner's Syndromes)
- **Vital Signs:**
  - o **Pulse:**
    - Tachycardia (Shock, MI, Pain, Anaemia)
      - Irregular (AF – MI, Alcohol, Mitral Regurgitation/Stenosis)
      - Low Volume (Shock, MI, Tamponade)
  - o **Respiratory Rate:**
    - Tachypnoea (Shock, MI, Pain, Anaemia)
  - o **Blood Pressures:**
    - Hypertension (Pain, Essential Hypertension)
    - Hypotension (Shock, Heart Failure)
  - o **Temperature:**
    - Fever (Infective Endocarditis, Pericarditis, Myocarditis)
- **Hands:**
  - o Perfusion + CRT
  - o Pale Nails & Palmar Crease Pallor (Anaemia)
  - o Palmar Erythema (Polycythaemia)
  - o Peripheral Cyanosis (Heart Failure, Pulmonary Oedema)
  - o Clubbing (Chronic Cyanosis – Eg: "Cyanotic Heart")



- o Splinter Haemorrhages/Osler's Nodes (Painful Fingertips)/Janeway Lesions (Palms Infective Endocarditis)



**FIGURE 3.55**  
Osler's nodes in infective endocarditis



**FIGURE 3.75**  
Splinter haemorrhages

- o Xanthomata (Cholesterol in tendons - Dyslipidaemia)
- o Dupuytren's Contracture (Alcohol – Dilated Cardiomyopathy)

- **Arms:**

- Radio-Radial-Delay (Coarctation of the Aorta)
- Radio-Femoral-Delay (Coarctation of the Aorta)
- Track marks (IVDU/Infective Endocarditis)



- **Face:**

○ **Eyes:**

- Conjunctival Pallor (Anaemia)



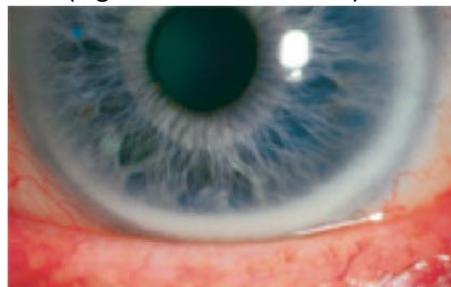
- Scleral Icterus (Jaundice)



- Xanthelasma (periorbital cholesterol)



- +Fundoscopy for Roth's Spots (Infective Endocarditis)
- Arcus Senilis (Sign of CVD risk factors)



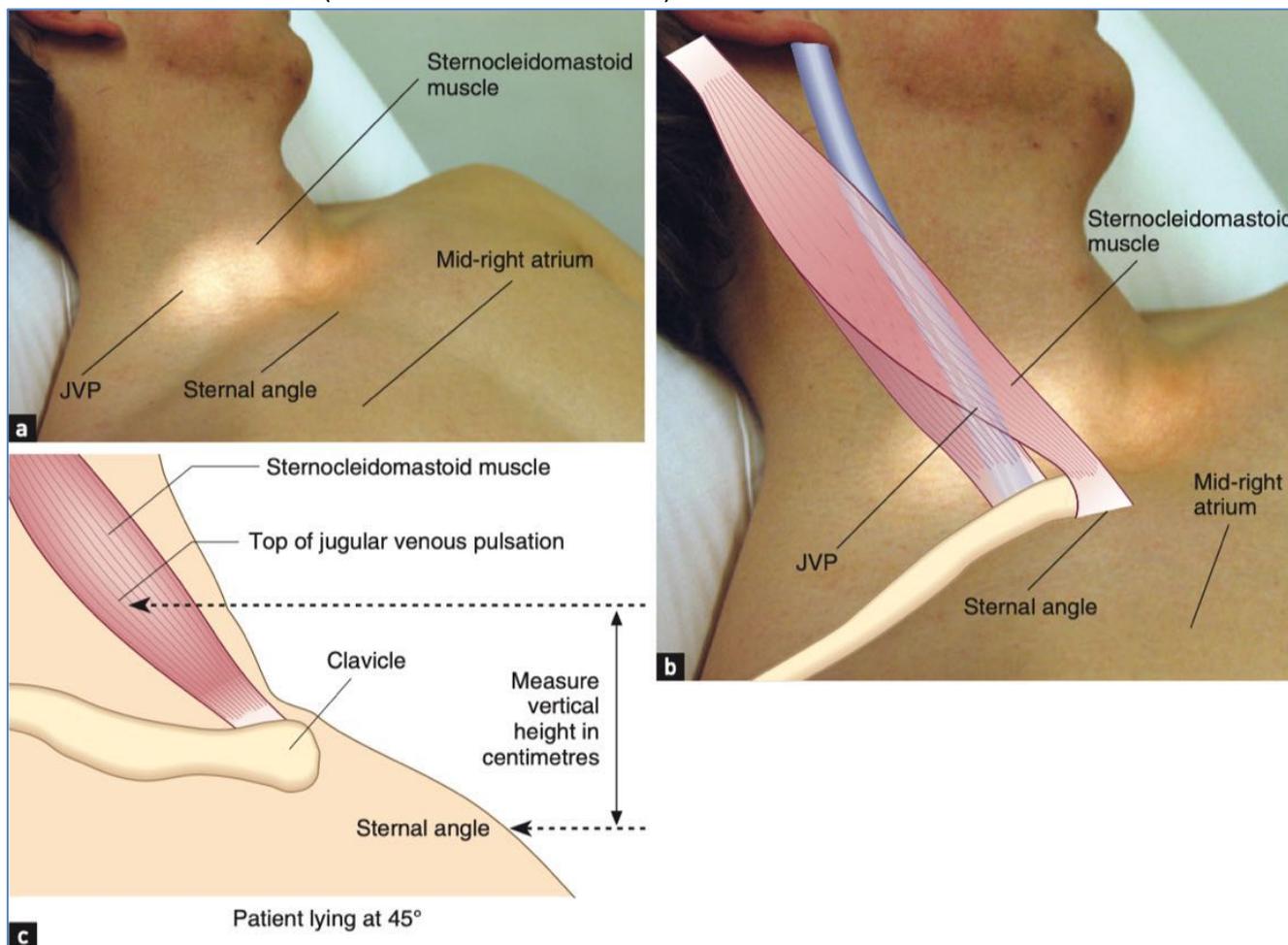
- **Mitral Facies/Malar Rash (Mitral Stenosis)**

○ **Mouth:**

- Hydration
- Central Cyanosis/Peripheral Cyanosis (CCF - Pulmonary Oedema)
- Gum Pallor (Anaemia)
- Poor Dental Hygiene (Infective Endocarditis)
- High Arched Palate (Marfan's Syndrome)

- **Neck:**

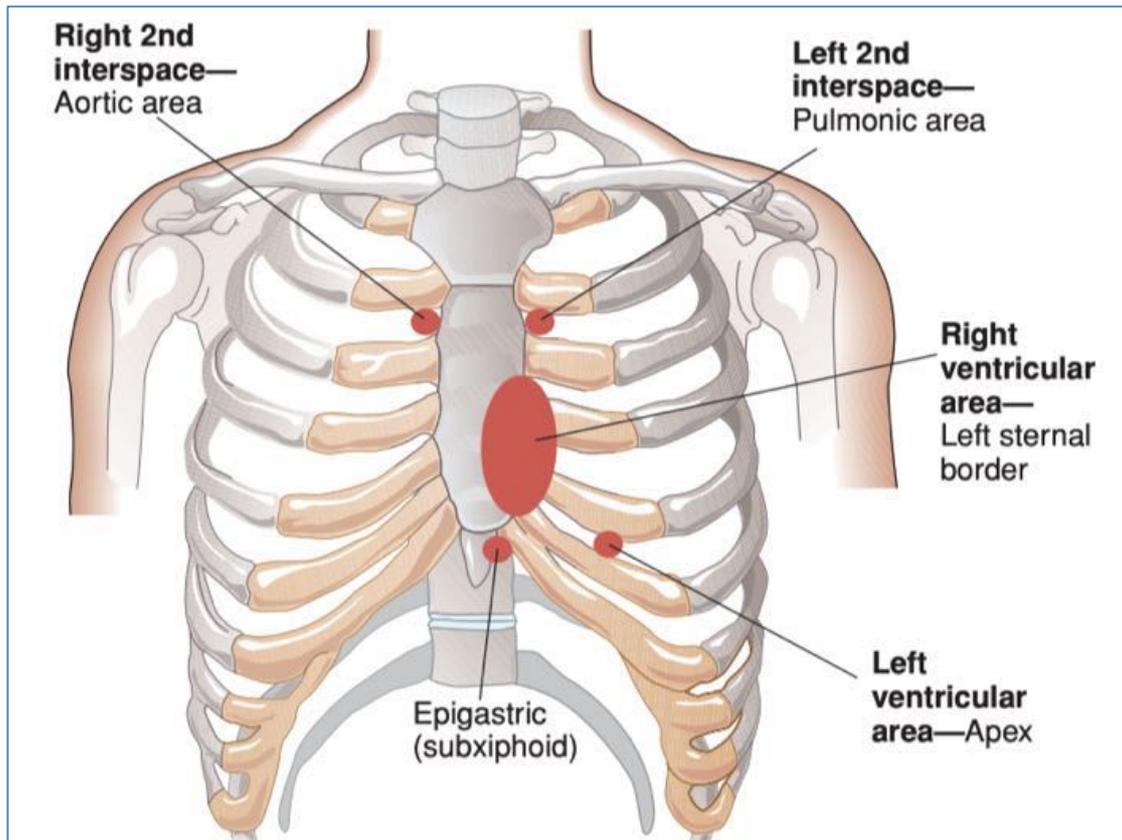
- ↑JVP (RVF, Pulmonary Hypertension) + Hepatojugular Reflex
- Jugular Venous Pulsations (Tricuspid Regurgitation)
- Carotid Pulses (Character/Volume)
- Carotid Bruits (Carotid Stenosis – Atheroma)



Unattributable

- **Chest:**

- **Inspection:**
  - Scars (CABG, Sternotomy)
  - Chest Deformities (Pectus Excavatum, Pectus Carinatum, Barrel Chest, Kyphosis, Lordosis)
  - Bruising
  - Visible Apex Beat
  - Pacemaker
- **Palpation:**
  - Apex Beat (Normally 5ICSMCL) – Displaced in Cardiomegaly & Hypertrophic Cardiomyopathy.
  - Heaves (Mitral/Tricuspid Regurgitation)
  - Thrills (Palpable Systolic Murmurs)
- **Percussion (NOT NECESSARY):**
  - Heart Borders
- **Auscultation:**
  - Muffled Heart Sounds (COPD, Tamponade)
  - Murmurs (Mitral/Tricuspid/Aortic/Pulmonary Valves) (Bell – Diastolic)(Diaphragm – Systolic)
    - +/- Axillary/Carotid Radiation
  - Pericardial Friction Rub (Pericarditis)



Unattributable

- **Back:**
  - (+ Respiratory if CCF – Basal Inspiratory Crackles)
  - Sacral Oedema (RHF)
- **Abdomen – LYING FLAT:**
  - Visible Pulsatile Masses (Aneurysm)
  - Scars
  - Tenderness
  - Hepatomegaly (Portal Hypertension/RHF)
    - + Pulsatile (If Tricuspid Regurgitation)
  - Splenomegaly (Infective Endocarditis)
  - Ascites/Shifting Dullness/Fluid Thrill (RHF)
  - Aortic Width (Aneurysm)
  - Renal Bruits
- **Legs & Feet:**
  - Peripheral Oedema (RHF/fluid overload/Valvular failure)



- Venous Stasis (Shiny Skin, Hair Loss, & Venous Ulcers)



- - Calf Tenderness (PVD, PE)
  - Arterial Ulcers
  - Pulses (Popliteal/Dorsalis Pedis/Posterior Tibial)
  - Cap Refill/Warm/Well Perfused
  - Clubbing
  - Splinters/Janeways/Osler's



- **FIGURE 3.27**  
Janeway lesions

## LIKELY FOCUSED CARDIO EXAMS FOR OSCE

Causes (differential diagnosis) of chest pain and typical features		
Pain	Causes	Typical features
Cardiac pain	Myocardial ischaemia or infarction	Central, tight or heavy; may radiate to the jaw or left arm
Vascular pain	Aortic dissection	Very sudden onset, radiates to the back
Pleuropericardial pain	Pericarditis ± myocarditis Infective pleurisy Pneumothorax Pneumonia Autoimmune disease Mesothelioma Metastatic tumour	Pleuritic pain, worse when patient lies down Pleuritic pain Sudden onset, sharp, associated with dyspnoea Often pleuritic, associated with fever and dyspnoea Pleuritic pain Severe and constant Severe and constant, localised
Chest wall pain	Persistent cough Muscular strains Intercostal myositis Thoracic zoster Coxsackie B virus infection Thoracic nerve compression or infiltration Rib fracture Rib tumour, primary or metastatic Tietze's syndrome	Worse with movement, chest wall tender Worse with movement, chest wall tender Sharp, localised, worse with movement Severe, follows nerve root distribution, precedes rash Pleuritic pain Follows nerve root distribution History of trauma, localised tenderness Constant, severe, localised Costal cartilage tender
Gastrointestinal pain	Gastro-oesophageal reflux Diffuse oesophageal spasm	Not related to exertion, may be worse when patient lies down—common Relieved by swallowing e.g. of warm water
Airway pain	Tracheitis Central bronchial carcinoma Inhaled foreign body	Pain in throat, breathing painful
Central pain	Panic attacks	Often preceded by anxiety, associated with breathlessness and hyperventilation symptoms (dizziness, perioral paraesthesia)
Mediastinal pain	Mediastinitis Sarcoid adenopathy, lymphoma	

### Left Heart Failure (LVF):

- **TYPICAL Symptoms/Presentation:**
  - Exertional Dyspnoea
  - Orthopnea
  - Paroxysmal Nocturnal Dyspnoea
  - Wheezing Cough (“Cardiac Asthma”)
  - **(+ Syncope + Angina = Aortic Stenosis)**
  - **(+ High Arch Palate of Marfan’s = Mitral Prolapse)**
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachypnoea, Tachycardia (Low Volume), Hypotension
  - **Other:**
    - **↓CO** → Cold peripheries, ↑CRT, Peripheral Cyanosis, Cerebral Hypoperfusion (Inattention, Confusion)
    - **Pulmonary Congestion** → Central Cyanosis, Basal Lung Crepitations, Diffuse Wheezes.
    - Abdo-Jugular Reflux Positive.
    - Laterally Displaced Apex Beat (LV Dilation)
  - **Signs of Causes:**
    - Mitral Facies & Mitral Regurgitation (Pan-Systolic Murmur over Mitral/Apex)
    - Mitral Facies, Mitral Stenosis (Pan-Diastolic Crescendo Murmur over Mitral/Apex)
    - OR Aortic Stenosis (Systolic-Ejection Murmur over Right-Sternal Border)
    - OR Aortic Regurgitation (Decrescendo Diastolic Murmur over Right Sternal Border)
    - (Cardiac Cachexia if → Right Heart Failure)

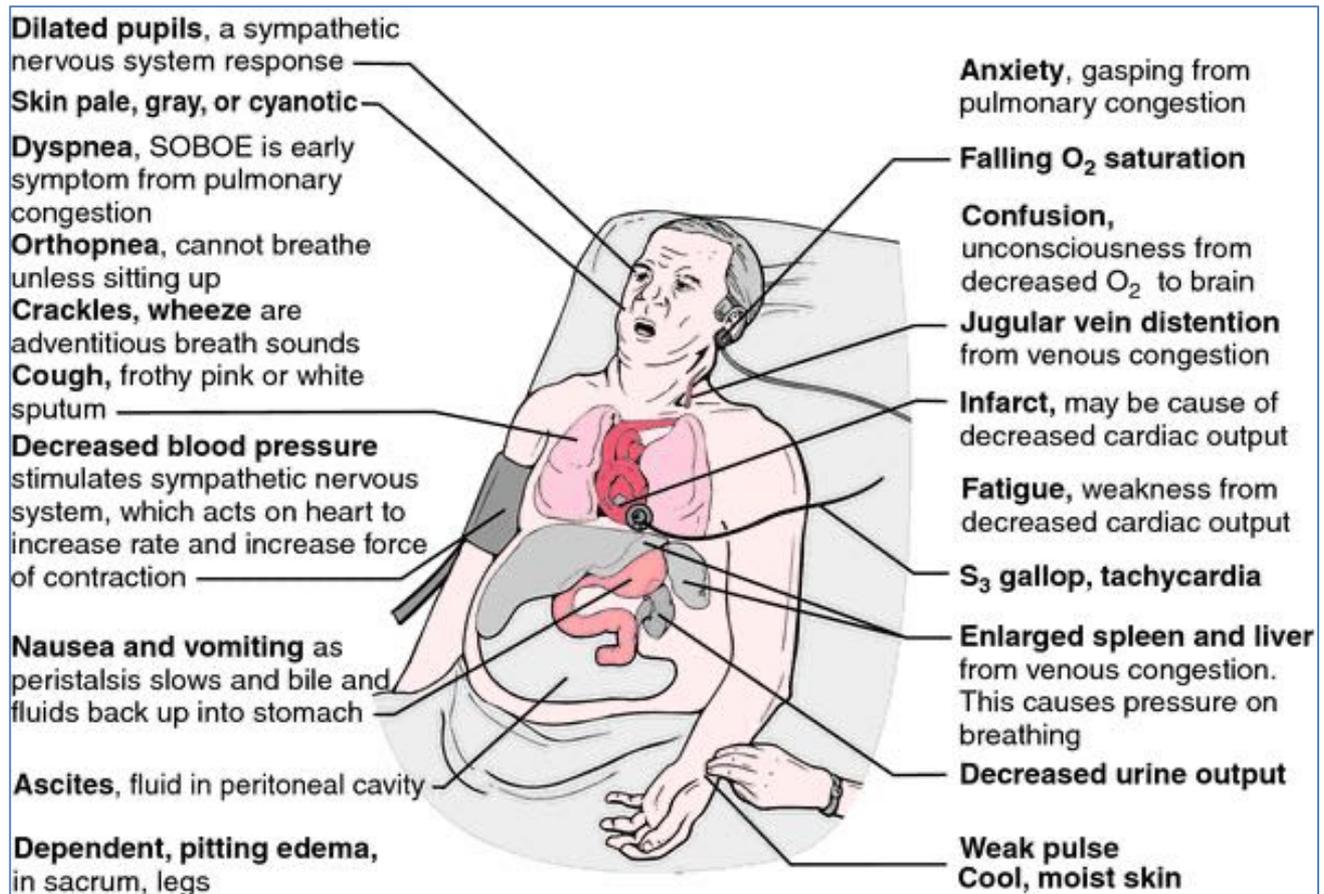
## Right Heart Failure (RVF):

### - TYPICAL Symptoms/Presentation:

- Anorexia/Cardiac Cachexia (Portal HTN)
- Swollen Ankles, Sacrum & Abdomen,
- Weight Gain (Fluid)
- (+ Pulsatile Liver = Tricuspid Regurgitation)

### - TYPICAL Clinical Signs:

- **Vitals:**
  - Low-Volume Pulse
- **Other:**
  - $\downarrow$ CO  $\rightarrow$  Cold peripheries,  $\uparrow$ CRT, Peripheral Cyanosis, Cerebral Hypoperfusion (Inattention, Confusion)
  - RV-Heave
  - **Peripheral Congestion**  $\rightarrow$  Peripheral Oedema (Sacral/Tibial), Ascites, Small Pleural Effusions.
  - $\uparrow$ JVP, Kussmaul's Sign ( $\uparrow$ JVP on Inspiration)
  - **Portal Hypertension**  $\rightarrow$  "Cardiac Cachexia", Caput Medusa, Tender Hepatomegaly, Pulsatile Liver (TR),
- **Signs of Causes:**
  - **COPD & Cor-Pulmonale** (RVF due to Pulmonary Hypertension)
  - **LVF** (Pulmonary Congestion)
  - **Tricuspid Regurgitation** (Pansystolic Murmur over Tricuspid + Pulsatile Liver)



## **IHD & Acute Myocardial Infarction:**

### **TYPICAL Symptoms/Presentation:**

#### ○ IHD:

- Angina (Severe Central Crushing Chest Pain):
  - Stable = Transient Exertional
  - Variant/Prinzmetal = Transient @ Rest
  - Unstable = Resting Angina of ↑Severity & Frequency
- (+/- Diaphoresis, Dyspnoea, Anxiety)

#### ○ AMI:

- Angina (Severe Central Crushing Chest Pain)
  - >20mins
  - Radiating to L-Arm, Neck & Jaw
- Dyspnoea
- Diaphoresis
- Anxiety

### **TYPICAL Clinical Signs:**

#### ○ Vitals:

- Tachycardia/Bradycardia
  - +/-Arrhythmias (AF, VT, VF, Heart Block)
- Tachypnoea
- Hypotension
- Afebrile

#### ○ Other:

- Clammy, Sweaty Hands
- **If LV Infarct** → LVF → Pulmonary Congestion, ↓CO, Cool Peripheries, Central & Peripheral Cyanosis, (Cardiogenic Shock)
  - **If Papillary Muscle Dysfunction** → Mitral Regurgitation (Midsystolic Murmur)
- **If RV Infarct** → RVF → ↑JVP, Kussmaul's Sign.
- **If Transmural** → Pericardial Friction Rub

#### ○ Signs of Causes:

- PVD, Hypertension, Diabetes, Hypercholesterolaemia, Obesity, Smoker.

## **Pulmonary Embolism:**

### **TYPICAL Symptoms/Presentation:**

- Sudden, SEVERE Dyspnoea
- Pleuritic Chest Pain
- (+/- Haemoptysis)
- (+/- Syncope)

### **TYPICAL Clinical Signs:**

#### ○ Vitals:

- Tachycardia, Tachypnoea, Hypotension (LVF), (+/-Fever)

#### ○ Other:

- **RVF** → Cool Peripheries, ↑CRT, Peripheral Cyanosis, ↑JVP, RV-Heave, Tricuspid Regurgitation Murmur
- **↓Respiratory Function** → Central Cyanosis
- Pleural Friction Rub,

#### ○ Signs of Causes:

- **DVT** – Calf Pain, Calf Tenderness, Calf Swelling/Erythema, Pedal Oedema.
  - (B/G of Pregnancy, Air Travel, Recent Surgery, Clotting Disorders)

**Rheumatic Fever/ Rheumatic Heart Disease:**

**TYPICAL Symptoms/Presentation:**

- **(Preceding Strep Throat):**
  - Fever, Pharyngitis, Tonsillitis, Lymphadenopathy
- **Rheumatic Fever (>2wks Post GABH Strep Pharyngitis):**
  - Fever
  - **Joints** - Migratory Polyarthritis, Ataxia
  - **Heart** - Pleuritic Chest Pain (Fibrinous Pericarditis)
  - **Nodules** – Subcutaneous Nodules
  - **Erythema Marginatum** – Red rings on trunk & limbs
  - **Sydenham Chorea** – Rapid, Involuntary Movements.
  - (↑in Indigenous)
- **Rheumatic Heart Disease:**
  - Palpitations (AF)
  - LVF → Exertional Dyspnoea, Orthopnoea, PND
    - Mitral Facies

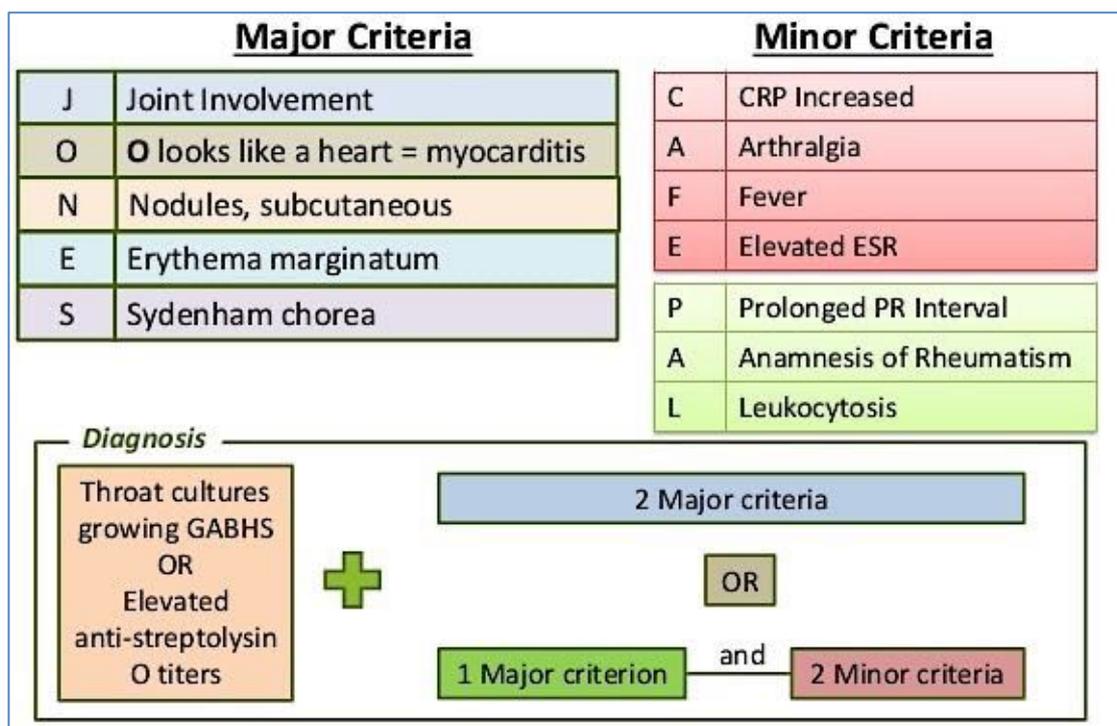
**TYPICAL Clinical Signs:**

**Acute Rheumatic Fever:**

- **Vitals:**
  - Fever, Tachycardia, Tachypnoea
- **Other:**
  - Ataxia (due to polyarthritis)
  - Pericardial Friction Rub (Fibrinous Pericarditis)
  - Subcutaneous Nodules
  - Erythema Marginatum (Red rings on trunk and limbs)
  - Sydenham’s Chorea (Rapid, Involuntary, Purposeless Movements)

**Rheumatic Heart Disease:**

- **Vitals:**
  - Afebrile, Tachycardia (+/- AF), Tachypnoea (CCF), Hypotensive
- **Other:**
  - Mitral Facies & Mitral Stenosis (+/- Mitral Regurgitation)
  - CCF → Inspiratory Creps, Peripheral & Central Cyanosis, ↑JVP, Dyspnoea
- **Signs of Cause:**
  - Indigenous, Low SES, Poor Hygiene

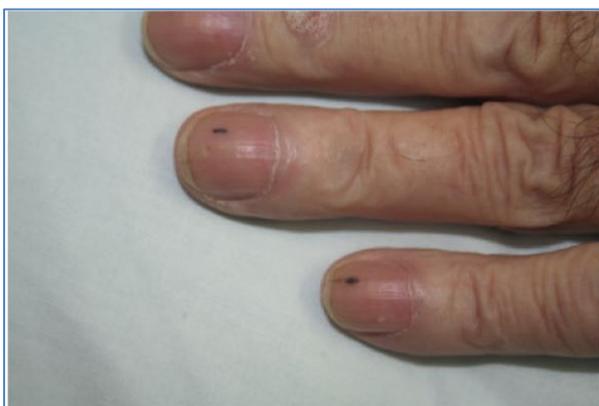


### **Acute Aortic Dissection:**

- **TYPICAL Symptoms/Presentation:**
  - Sudden, Severe Tearing Chest/Abdo Pain
    - Radiating to Back
  - (+/- Stroke)
  - (+/- ALOC – due to Tamponade)
  - (+/- Sudden Death)
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Unequal Radial Pulse Pressures,
    - Asymmetrical Blood Pressure
  - **Other:**
    - Pulsatile, Expansile Abdominal Masses, Renal Bruits
    - Signs of Tamponade (↑JVP, ↓Heart Sounds, Low-Volume Pulse, etc)
    - Aortic Regurgitation (Due to disruption of annulus) (Decrescendo Diastolic Murmur)
  - **Signs of Causes:**
    - Marfan’s Habitus
  - **Complications:**
    - Myocardial Infarction (Coronary Occlusion), Mesenteric Ischaemia (Mesenteric Artery Occlusion), Pre-Renal Failure (Renal Artery Occlusion), Limb Ischaemia

### **Infective Endocarditis:**

- **TYPICAL Symptoms/Presentation:**
  - Acute PUO – (+ Chills, Night-Sweats/Weight Loss)
  - Dyspnoea
  - Mild Arthralgia (“licks joints, bites the heart”)
  - Palpitations
  - Haematuria
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Fever, Tachycardia, Tachypnoea
  - **Other:**
    - Clubbing, Palmar Crease Pallor, **Splinter Haemorrhages** (Septic Emboli), **Janeway Lesions** (Painless Maculopapular Bacterial Colonies on Palms), **Painful Osler’s Nodes** (Tender, Red, Raised Nodules on Pulps of Fingers)
    - Track marks (IVDU),
    - Conjunctival Pallor, **Retinal Roth’s Spots** (Retinal Haemorrhages), Poor Dentition,
    - **New or Changing Murmur** (Either side of heart) (Often Tricuspid), Prosthetic Valve Click,
    - Splenomegaly
  - **Signs of Causes:**
    - IVDU, Poor Dentition, Open Heart Surgery.



Splinter haemorrhages in the fingernails of a patient with staphylococcal aortic valve endocarditis



Janeway lesion

### **Acute Pericarditis:**

- **TYPICAL Symptoms/Presentation:**
  - Fever
  - Dyspnoea (+/- Dry Cough)
  - Pleuritic Chest Pain (Worse on Supine)
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia, Tachypnoea (Fast, Shallow), Febrile,
  - **Other:**
    - Pericardial Friction Rub (Best heard when sitting forward + hold breath)
    - IF Tamponade → ↑JVP, ↓Heart Sounds, Impalpable apex, & ↓CO.
  - **Signs of Causes:**
    - URTI, Post MI, Post Cardiac Surgery, Uraemia, SLE/Rheumatoid.

### **Chronic Constrictive Pericarditis:**

- **TYPICAL Symptoms/Presentation:**
  - Acute Symptoms for >3mths
  - Cachexia, Fatigue
  - RVF → Oedema, Abdo Distension
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia
    - +\*Pulsus Paradoxus (>10mmHg fall in Arterial Pulse Pressure on Inspiration)
    - Hypotension
  - **Other:**
    - Cachexia
    - ↑JVP + Kussmaul's Sign
    - Impalpable Apex, ↓Heart Sounds, Pericardial 'Knock'
    - Tender Hepatomegaly, Tender Splenomegaly, Ascites & Peripheral Oedema.
  - **Signs of Causes:**
    - Post MI, Post Cardiac Surgery, Uraemia, SLE/Rheumatoid

### **Acute Cardiac Tamponade:**

- **TYPICAL Symptoms/Presentation:**
  - Dyspnoea
  - Anxiety
  - Syncope
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachypnoea, Tachycardia (Low Volume & Pulsus Paradoxus), Hypotension, Afebrile
  - **Other:**
    - ↑JVP,
    - Impalpable Apex, ↓Heart Sounds,
    - Left Lung: Dull & Bronchial Breathing @ Base (Compressed by Heart)

### Acute Infective Myocarditis:

- **TYPICAL Symptoms/Presentation:**
  - (Viral Infection (Flu, Coxsackie, CMV, HIV, Parvo))
  - **Acute Heart Failure**– Dyspnoea/Orthopnoea, ALOC, Cardiogenic Shock.
  - Palpitations
  - Sudden Death
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Febrile, Tachycardia, Tachypnoea, Hypotension (if HF)
  - **Other:**
    - **Acute Heart Failure** – Peripheral Shutdown, ↑CRT, Low Pulse Pressure, ALOC, ↑JVP, Pulmonary Congestion, Dyspnoea, Basal Creps.
    - Palpitations
  - **Signs of Causes:**
    - URTI, Immunocompromise (HIV).

### Acute Toxic Myocarditis:

- **TYPICAL Symptoms/Presentation:**
  - (Cocaine, Prescription Meds, Arsenic, Alcohol, Snake Venom, Carbon Monoxide)
  - **Acute Heart Failure**– Dyspnoea/Orthopnoea, ALOC, Cardiogenic Shock.
  - Palpitations
  - Sudden Death
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Afebrile, Tachycardia, Tachypnoea, Hypotension (if HF)
  - **Other:**
    - **Acute Heart Failure** – Peripheral Shutdown, ↑CRT, Low Pulse Pressure, ALOC, ↑JVP, Pulmonary Congestion, Dyspnoea, Basal Creps.
    - Palpitations
    - CO-Poisoning → Headache, Dizziness, Nausea, Convulsions, ALOC
  - **Signs of Causes:**
    - Nasal Septal Necrosis (Cocaine), Snake Bite Marks, Confusion/Ataxia/Delirium.

### Dilated Cardiomyopathy: (Alcoholism/Genetic)

- **TYPICAL Symptoms/Presentation:**
  - Any Age
  - **Biventricular Heart Failure** – Dyspnoea, Orthopnoea, PND, Fatigue, Cyanosis, Peripheral Oedema, Ascites, Fatigue, Anorexia.
  - +/- Palpitations
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia (+/- Ventricular Arrhythmias), Tachypnoea, Hypotension, Afebrile
  - **Other:**
    - Cool Peripheries, ↑CRT, Peripheral & Central Cyanosis, Low-Volume Pulse,
    - Dyspnoea, Orthopnoea, PND,
    - Peripheral Oedema, Ascites, Tender Hepatomegaly, Pulsatile Liver(TR),
    - ↓Heart Sounds, Basal Inspiratory Creps,
  - **Signs of Causes:**
    - Dupuytren's Contractures (Chronic Alcoholism)

### Hypertrophic Cardiomyopathy: (Genetic)

#### - TYPICAL Symptoms/Presentation:

- Exertional Dyspnoea (LVF → Pulmonary Congestion)
- Angina (↑ Demand on Coronary Supply)
- Palpitations (AF/Ventricular Arrhythmias)
- Syncope

#### - TYPICAL Clinical Signs:

- **Vitals:**
  - Tachycardia, Tachypnoea, Hypotension, Afebrile
- **Other:**
  - Cool Peripheries, ↑ CRT, Peripheral & Central Cyanosis,
  - Sharp “Tapping” Pulse, Low Volume Pulse,
  - Prominent Pulsatile JVP (↓ RV-Compliance)
  - Lateral Apex Displacement, Ejection Systolic Murmur (LV-Outflow Obstruction – ↑ on Valsalva & ↓ on Squatting) & Pansystolic Murmur (Mitral Regurgitation)

### Restrictive Cardiomyopathy: (Amyloid/Sarcoid-osis)

#### - TYPICAL Symptoms/Presentation:

- Cachexia/Fatigue
- RVF → Oedema, Abdo Distension, ↑ JVP
- LVF - Cough/Dyspnoea/PND/Orthopnea
- Palpitations

#### - TYPICAL Clinical Signs:

- **Vitals:**
  - Tachycardia (+/- Arrhythmias), Low-Volume Pulse,
  - Hypotension
  - +\*Pulsus Paradoxus (>10mmHg fall in Arterial Pulse Pressure on Inspiration)
- **Other:**
  - Cool Peripheries, ↑ CRT, Peripheral & Central Cyanosis,
  - Cachexia
  - ↑ JVP + Kussmaul’s Sign
  - Impalpable Apex, ↓ Heart Sounds,
  - Tender Hepatomegaly, Tender Splenomegaly, Ascites & Peripheral Oedema.
- **Signs of Causes:**
  - Post MI, Post Cardiac Surgery, Uraemia, SLE/Rheumatoid

### Stress Cardiomyopathy: (Broken Heart Syndrome/Takotsubo)

#### - TYPICAL Symptoms/Presentation:

- Sudden Onset CCF:
  - Chest Pain
  - Dyspnoea
  - Palpitations (Vent. Arrhythmias)

#### - TYPICAL Clinical Signs:

- **Vitals:**
  - Tachycardia (+/- Arrhythmias), Low-Volume Pulse,
  - Hypotension
- **Other:**
  - Cool Peripheries, ↑ CRT, Peripheral & Central Cyanosis,

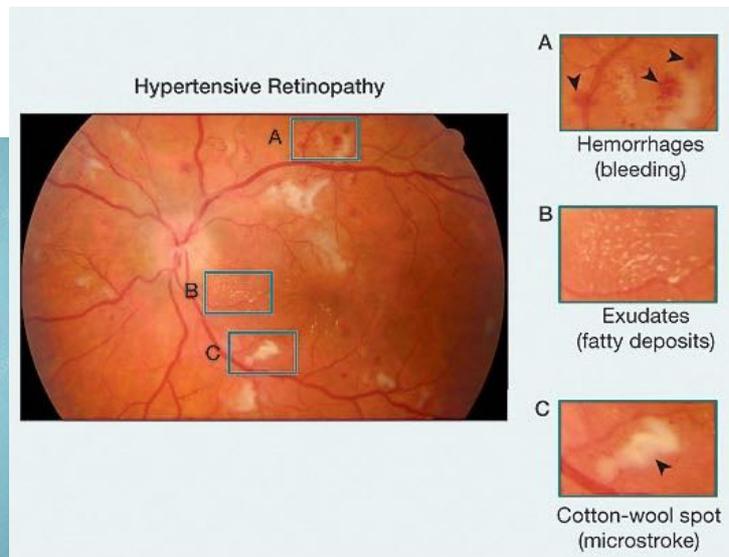
## Systemic Hypertension:

### - TYPICAL Symptoms/Presentation:

- Headaches/Dizziness
- Blurred Vision/Tinnitus
- Hypertensive Encephalopathy (N/V/ALOC)
- (Epistaxis)

### - TYPICAL Clinical Signs:

- **Inspect for Signs of Causes:**
  - Cushing's Syndrome, Conn's Syndrome, ↑PTH, Hypercalcaemia, Hyperthyroidism, Hypothyroidism, Pregnancy (Eclampsia), Acromegaly, Polycythaemia, CKD, Phaeo,
- **Vitals:**
  - Hypertension (Note: Inverse Postural Variation in *Essential Hypertension*, but Normal Postural Variation in *Secondary Hypertension*),
  - RF-Delay (coarctation)
- **Other:**
  - Palmar Erythema, ↓CRT, Facial Flushing
  - Fundoscopy (Hypertensive Retinopathy +/- Papilloedema), Full Neurological Exam
  - Carotid Palpation, Carotid Bruits
  - S4 on Auscultation (4<sup>th</sup> Heart Sound = Splitting of S1 due to late Mitral Closure)
  - Pulsatile Abdominal Masses (Aneurysm), Renal Masses (Tumours), Renal Bruits,
  - **+Urinalysis**



## Pulmonary Hypertension & Cor-Pulmonale: (LVF, COPD)

### - TYPICAL Symptoms/Presentation:

- **RVF Secondary to Pulmonary Hypertension:**
  - **COPD:** Dyspnoea, Cough, Wheeze
  - **Pulmonary HTN:** Cough/Dyspnoea/PND/Orthopnea
  - **RVF:** Swelling (Legs, Abdo), Chest Pain

### - TYPICAL Clinical Signs:

- **Vitals:**
  - Tachycardia (if LVF), Tachypnoea (if COPD/LVF), Hypotension (If LVF), Afebrile
- **Other:**
  - **If LVF:** Cool Peripheries, ↑CRT, Peripheral & Central Cyanosis, Low Volume Pulse
  - **If COPD:** Clubbing, Tar Staining, Peripheral & Central Cyanosis
  - ↑JVP + a-Wave, RV-Heave, Loud S2 (closure of Pulmonic Valve) Abdojugular Reflux Positive, Portal Hypertension (Tender Hepatomegaly), Ascites, Sacral/Pedal Oedema,
- **Signs of Causes:**
  - LVF, Smoking, COPD, IPF

### **Carcinoid Heart Disease:**

- **TYPICAL Symptoms/Presentation:**
  - Episodic Flushing of Skin
  - Cramps
  - Diarrhoea/Nausea/Vomiting
  - (+/- Valvular Heart Failure)
  - (+/- Bronchoconstriction → Dyspnoea)
- **TYPICAL Clinical Signs:**
  - Flushing of Skin
  - **RVF:** Tricuspid Regurgitation (Pansystolic Murmurs), Pulmonary Stenosis (Systolic Murmur), Tender Hepatomegaly, Portal Hypertension

### **Mitral Stenosis:**

- **TYPICAL Symptoms/Presentation:**
  - LHF – Exertional Dyspnoea/Orthopnea/PND/ Pink Frothy Sputum
  - (If RVF → Ascites/Peripheral Oedema/Fatigue)
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia (Low-Vol Pulse, +/- AF), Tachypnoea, Hypotensive
  - **Other:**
    - **LHF:** Cool Peripheries, ↑CRT, Peripheral & Central Cyanosis, Low Volume Pulse,
    - Mitral Facies, ↑JVP if Pulmonary HTN, RV-Heave, Inspiratory Creps,
    - Mitral Stenosis (Pan-Diastolic Rumbling Murmur with Opening Snap & late Crescendo)
  - **Signs of Causes:**
    - Rheumatic Heart Disease, Congenital

### **Mitral Regurgitation:**

- **TYPICAL Symptoms/Presentation:**
  - **Acute (Eg: Papillary Rupture, MI, Infective Endocarditis):**
    - Acute Pulmonary Oedema → Exertional Dyspnoea/Orthopnea/PND/ Pink Frothy Sputum
    - +/- Shock
  - **Chronic (Eg: MVP, Ageing, Rheumatic Heart Disease, Cardiomyopathy) :**
    - Compensated Pulmonary Oedema → Exertional Dyspnoea/Fatigue
- **TYPICAL Clinical Signs:**
  - Acute:**
    - **Vitals:**
      - Tachycardia (Low Vol. +/- AF), Tachypnoea, Hypotension
    - **Other:**
      - **LHF:** Cool Peripheries, ↑CRT, Peripheral & Central Cyanosis, Low Volume Pulse,
      - Mitral Facies, ↑JVP if Pulmonary HTN, RV-Heave, Inspiratory Creps,
      - Mitral Regurgitation (Loud Systolic Murmur + Thrill @ Apex)
    - **Signs of Causes:**
      - Papillary Rupture, MI, Infective Endocarditis
  - Chronic:**
    - **Vitals:**
      - Normal Pulse Rate & Volume (+/- AF), Tachypnoea, Normotensive
    - **Other:**
      - Displaced Apex, RV-Heave, Mitral Regurgitation (Loud Systolic Murmur → Axilla + Thrill @ Apex)
      - If Severe: Signs of LHF (Cool Peripheries, ↑CRT, P&C-Cyanosis, Low Volume Pulse)
    - **Signs of Causes:**
      - MVP, Ageing, Rheumatic Heart Disease, Cardiomyopathy

### **Aortic Stenosis:**

- **TYPICAL Symptoms/Presentation:**
  - **Aortic Stenosis Triad:**
    - Exertional Chest Pain
    - Exertional Dyspnoea
    - Exertional Syncope
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Normal/Tachycardia
  - **Other:**
    - General Inspection Normal
    - *Slow-Rising* (“Anacrotic”) Carotid Pulse, Displaced Apex (LV-Hypertrophy),
    - Systolic R-Parasternal Thrill (if Severe)
    - Reversed Splitting of S2 (Delayed LV Ejection), Harsh Crescendo-Decrescendo Systolic Murmur Over Aorta + Opening Snap (Radiating to Carotids)
  - **Signs of Causes:**
    - Age-Related (Elderly), Rheumatic

### **Aortic Insufficiency:**

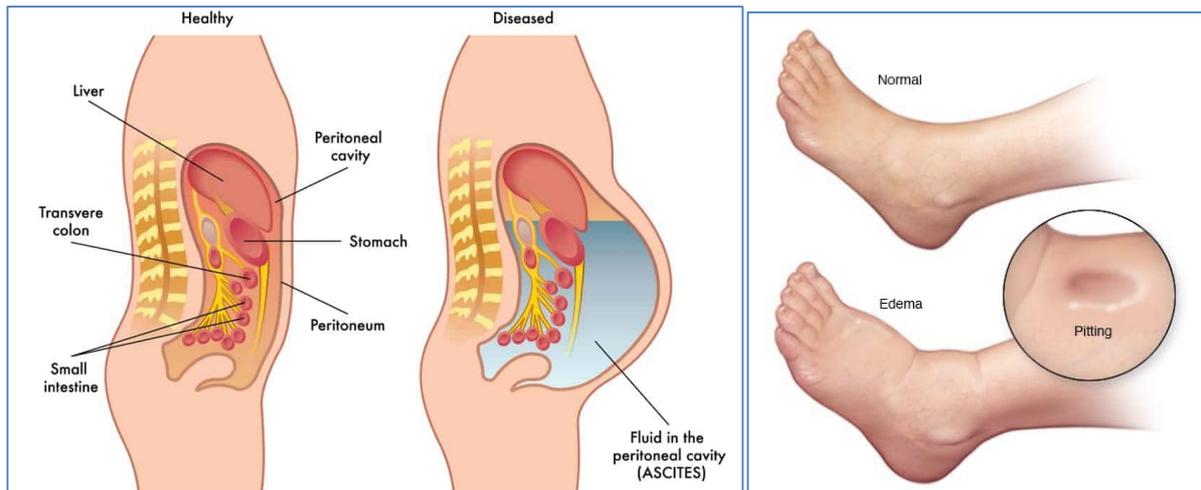
- **TYPICAL Symptoms/Presentation:**
  - **Same as Aortic Stenosis:**
    - Exertional Chest Pain
    - Exertional Dyspnoea
    - Exertional Syncope
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia, BP: Wide Pulse Pressure, R: Normal
  - **Other:**
    - Inspect for Marfan’s
    - Collapsing “Water-Hammer” Pulse (↑ by Taking Radial Pulse Above Patient’s Head),
    - Displaced Apex (LV Hypertrophy), Diastolic Thrill @ L-Sternal,
    - Decrescendo Diastolic Murmur @ Aortic Area
    - (Signs of LVF if Severe)
  - **Signs of Causes:**
    - Marfan’s Syndrome
    - Ankylosing Spondylitis,
    - Rheumatoid Arthritis,
    - Tertiary Syphilis,
    - Infective Endo.

### **Tricuspid Stenosis (Rare):**

- **TYPICAL Symptoms/Presentation:**
  - RHF – Peripheral Oedema/Ascites/Portal Hypertension
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia
  - **Other:**
    - ↑JVP with Slow Descent, No Pulmonary Signs
    - Pan-Diastolic Rumbling Tricuspid Murmur + Late Accentuation (Atrial Contraction)
    - Tender Pulsatile Hepatomegaly, Splenomegaly, Ascites, Peripheral Oedema
  - **Signs of Causes:**
    - Rheumatic Heart Disease

### Tricuspid Insufficiency:

- **TYPICAL Symptoms/Presentation:**
  - RHF – Peripheral Oedema/Ascites/Portal Hypertension
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia
  - **Other:**
    - ↑JVP with Large Pulsations, RV Heave,
    - Pan-Systolic High-Pitched Tricuspid Murmur
    - Tender Pulsatile Hepatomegaly (+/- Dancing R-Nipple), Splenomegaly, Ascites, Peripheral Oedema, Pulsatile Leg Veins.
  - **Signs of Causes:**
    - \*\*\*IVDU, Infective Endocarditis.



<https://www.alfapump.com/ascites/>

[https://sci.washington.edu/info/newsletters/articles/15\\_spr\\_edema.asp](https://sci.washington.edu/info/newsletters/articles/15_spr_edema.asp)

### Pulmonary Stenosis:

- **TYPICAL Symptoms/Presentation:**
  - RHF - Peripheral Oedema/Ascites
  - Chest Pain
  - Dyspnoea
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia, Low Volume Pulse (If Severe), Hypotension (if Severe)
  - **Other:**
    - (↓CO) → Peripheral Cyanosis, Cool Peripheries, ↑CRT, Low Volume Pulse
    - ↑JVP with Large Pulsations (RA-Hypertrophy), RV Heave (RV-Hypertrophy), Pulmonary Thrill,
    - Ejection Systolic Murmur @ Pulmonary Area (Max on Inspiration)
    - Pulsatile Tender Hepatomegaly
  - **Signs of Causes:**
    - Congenital, Carcinoid.

### Pulmonary Insufficiency:

- **TYPICAL Symptoms/Presentation:**
  - RHF - Peripheral Oedema/Ascites
  - Chest Pain
  - Dyspnoea
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia, Low Volume Pulse (If Severe), Hypotension (if Severe)
  - **Other:**
    - ↓CO, ↑JVP, Decrescendo Diastolic Pulmonary Murmur
  - **Signs of Causes:**
    - Pulmonary HTN, Infective Endocarditis, Congenital

### **Pulmonary Hypertension & Cor-Pulmonale:** (LVF, COPD)

- **TYPICAL Symptoms/Presentation:**
  - **RVF Secondary to Pulmonary Hypertension:**
    - **COPD:** Dyspnoea, Cough, Wheeze
    - **Pulmonary HTN:** Cough/Dyspnoea/PND/Orthopnea
    - **RVF:** Swelling (Legs, Abdo), Chest Pain
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia (if LVF), Tachypnoea (if COPD/LVF), Hypotension (If LVF), Afebrile
  - **Other:**
    - **If LVF:** Cool Peripheries, ↑CRT, Peripheral & Central Cyanosis, Low Volume Pulse
    - **If COPD:** Clubbing, Tar Staining, Peripheral & Central Cyanosis
    - ↑JVP + a-Wave, RV-Heave, Loud S2 (closure of Pulmonic Valve) Abdojugular Reflux Positive, Portal Hypertension (Tender Hepatomegaly), Ascites, Sacral/Pedal Oedema,
  - **Signs of Causes:**
    - LVF, Smoking, COPD, IPF



### **Atrial Septal Defect (L-R):**

- **TYPICAL Symptoms/Presentation:**
  - Asymptomatic until ≈30yrs.
  - Eventual RVF (Peripheral Oedema/Ascites) due to Pulmonary HTN (Dyspnoea/Orthopnea/PND)
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Normal
  - **Other:**
    - RV-Hypertrophy, Fixed Splitting of S2 (Late Tricuspid Closure)
    - (If Shunt Reverses → Cyanosis, Clubbing, Tachycardia, Tachypnoea)

### **Ventricular Septal Defect (L-R):**

- **TYPICAL Symptoms/Presentation:**
  - **\*\* (Infants)** Failure to Thrive
  - LVF & Pulm HTN (Dyspnoea/Orthopnea/PND)
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia, Tachypnoea, Hypotension,
  - **Other:**
    - Signs of ↓CO
    - Pansystolic Murmur @ Lower L-Sternal border, + Systolic Thrill @ L-Sternal Edge
  - **Signs of Causes:**
    - Congenital, (Or Septal MI)

### Patent Ductus Arteriosus (Aorta → Pulmonary Artery):

- **TYPICAL Symptoms/Presentation:**
  - Pulmonary HTN → Pulmonary Congestion/Dyspnoea/Cough
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia (Collapsing Pulse), Hypotension (with ↓ Diastolic)
  - **Other:**
    - Hyperkinetic Apex Beat, Reversed Splitting of S2 (Early Aortic Valve Closure)
    - “machinery Murmur” max @ Pulmonary
    - **\*\*Note: IF THE SHUNT HAS REVERSED, the Child may become Dyspnoeic/Cyanotic which is relieved by Squatting (which ↑ Aortic Pressure & Reverts shunt back to L→R)**

### Coarctation of Aorta: (Typically distal to L-Subclavian)

- **TYPICAL Symptoms/Presentation:**
  - Poor Lower-Body Development
  - Claudication
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Upper-Body HTN, Lower Body Hypotension,
  - **Other:**
    - Radio-Femoral Delay, Weak Femoral Pulses, Midsystolic Murmur @ Praecordium
  - **Signs of Causes:**
    - Congenital, Mostly Males (Although also associated with Turner’s Syndrome)

### Tetralogy of Fallot: (VSD + RVH + Overriding Aorta + Subpulmonic Stenosis)

- **TYPICAL Symptoms/Presentation:**
  - (Infants) – Poor Feeding, Cyanotic Spells, Failure to Thrive, Syncope
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia, Tachypnoea, Hypotension
  - **Other:**
    - Central & Peripheral Cyanosis (Blue Baby), Clubbing, Polycythaemia, Parasternal Heave (RVH), Systolic Thrill, Pulmonary Ejection Systolic Murmur.

### Transposition of Great Vessels:

- **TYPICAL Symptoms/Presentation:**
  - (Fatal Without Concurrent ASD/VSD Exists)
  - With ASD/VSD:
    - Cyanosis, Palpitations, Dizziness, Dyspnoea
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Tachycardia, Systemic Hypotension, Pulmonary Hypertension, Tachypnoea,
  - **Other:**
    - Cyanosis, Clubbing, Polycythaemia
    - (Adults – Scars, Facial Flushing, Cyanosis, Oedema)

### Peripheral Vascular (Arterial) Disease:

#### - TYPICAL Symptoms/Presentation:

- Claudication
- Gangrene
- Arterial Ulcers
- \*\*Impotence
- (Acute Occlusion → Critical Limb Ischaemia)

#### - TYPICAL Clinical Signs:

- **Vitals:**
  - Normal
- **Other:**
  - ↑CRT, Peripheral Cyanosis, Gangrene, \*\*Raynaud's Phenomenon, Arterial Ulcers (Painful, Dry, Superficial), Atrophic Skin/Hair Loss, Focal Weaknesses in Peripheral Pulses, Absent Pulses, Arterial bruits (Carotid/Renal/ Femoral), Neurological Signs (Dizziness, Syncope, CVA),
  - (If Critical Limb Ischaemia → Acute Limb Pain, Absent Distal Pulses, Pale Limb)
- **Signs of Causes:**
  - Hypercholesterolaemia, Smoking, Hypertension, Obesity, Diabetes



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### Deep Vein Thrombosis (Phlebothrombitis/Thrombophlebitis):

#### - TYPICAL Symptoms/Presentation:

- Calf Tenderness
- Distal Oedema
- Heat/Redness
- (Can → PE → Acute Dyspnoea & Collapse)

#### - TYPICAL Clinical Signs:

- **Vitals:**
  - Normal
- **Other:**
  - Asymmetrical Calf Tenderness, Asymmetrical Calf Oedema, Heat/Redness, Dilated superficial veins,
- **Signs of Causes:**
  - Immobility, Trauma, Cardiac Failure, DIC, Pregnancy.



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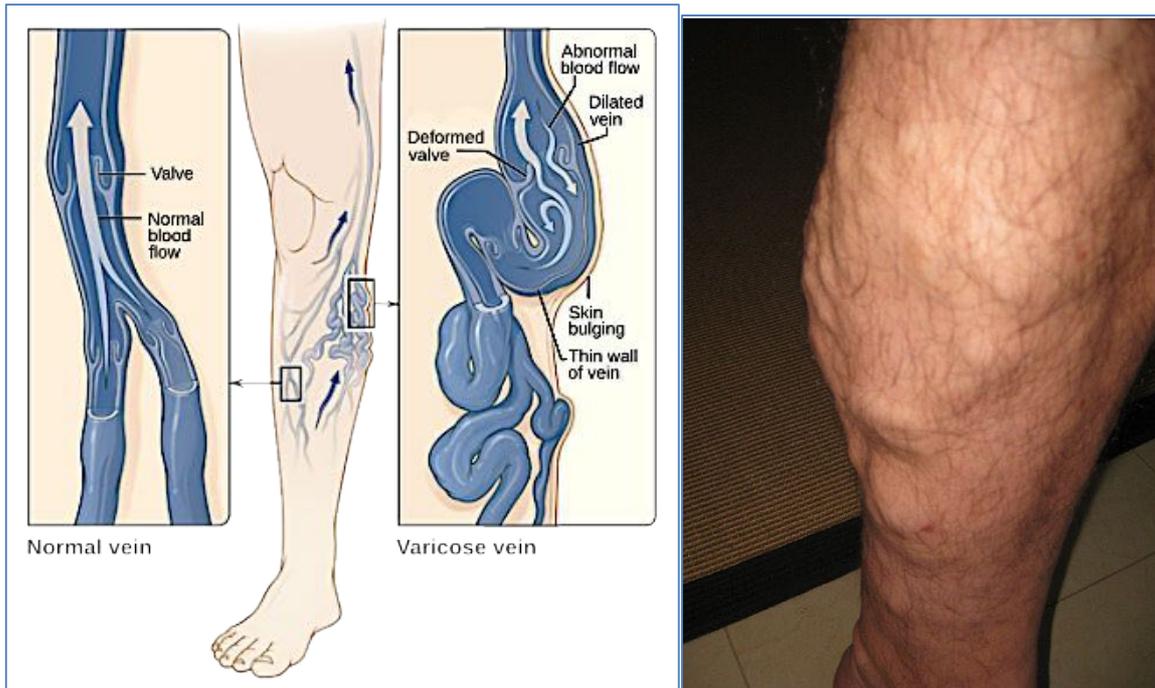
## Varicose Veins:

### - TYPICAL Symptoms/Presentation:

- Varicosities
- Persistent Oedema
- Venous Ulcerations
- Poor wound healing

### - TYPICAL Clinical Signs:

- **Vitals:**
  - Normal
- **Other:**
  - Varicosities, Pedal Oedema, Venous Stasis Ulcers, Eczema, Haemosiderin Pigmentation,
  - Palpation (Hard veins = thrombosis; Tenderness = Thrombophlebitis)
  - Special tests (Trendelenburg's & Perthe's Tests)



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## Lymphangitis:

### - TYPICAL Symptoms/Presentation:

- Fever
- Painful, Red, Subcutaneous Streaks
- Painful Lymphadenopathy

### - TYPICAL Clinical Signs:

- **Vitals:**
  - Fever, Tachycardia, Tachypnoea
- **Other:**
  - Painful red subcutaneous streaks (inflamed lymphatics), Can → cellulitis



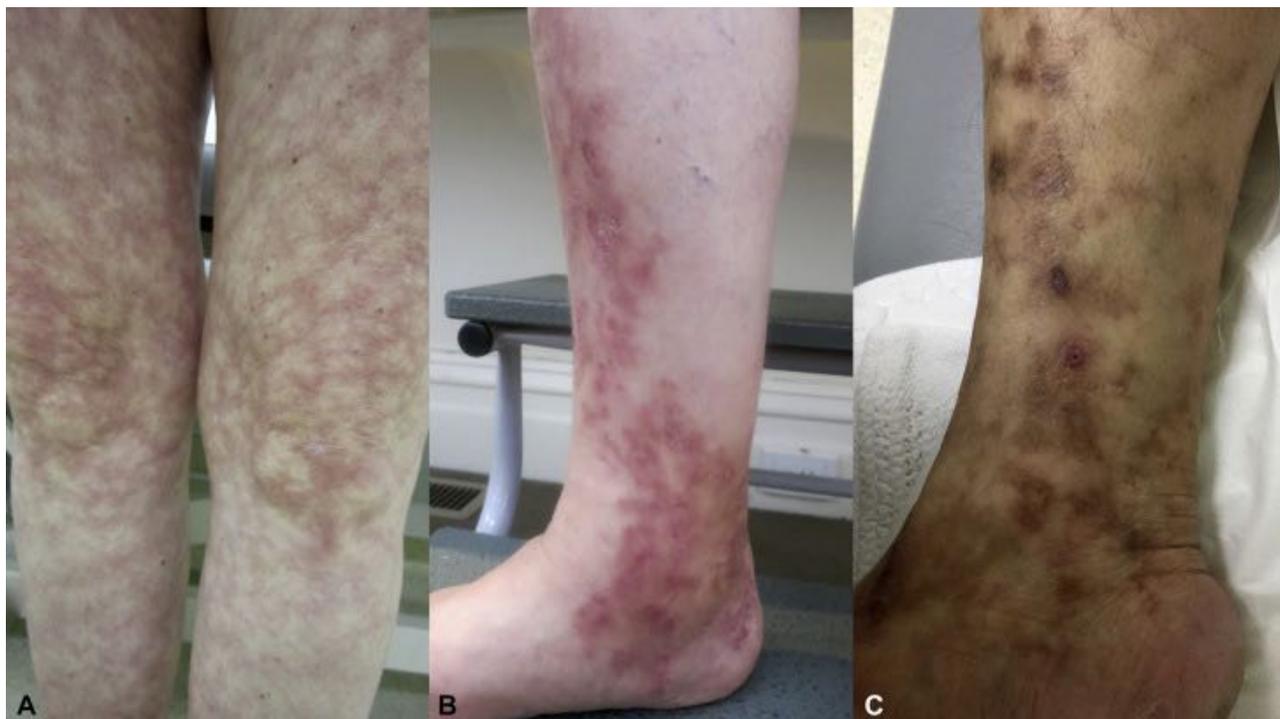
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### **Giant Cell (Temporal) Arteritis:**

- **TYPICAL Symptoms/Presentation:**
  - **Fever/Fatigue/Weight Loss**
  - **Headache** (Pain on wearing a Hat)
  - **Jaw Claudication**
  - Visual Disturbances
  - (+/- *Polymyalgia Rheumatica* - Pain/Stiffness in Neck/Shoulders/Hips)
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Fever
  - **Other:**
    - Temporal Artery Tenderness
    - Cachexia

### **Polyarteritis Nodosa:**

- **TYPICAL Symptoms/Presentation:**
  - Fever/Rash/Malaise/Weight Loss
  - Diffuse Myalgia, Peripheral Neuropathy
  - Abdo Pain, Melena
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Fever, Hypertension (due to *Kidney Failure*)
  - **Other:**
    - Rash
    - Digital Gangrene
    - Peripheral Neuropathy



[https://www.jaad.org/article/S0190-9622\(19\)32992-5/fulltext](https://www.jaad.org/article/S0190-9622(19)32992-5/fulltext)

**Buerger's Disease (Thromboangiitis Obliterans/ "Smoker's Gangrene"):**

- **TYPICAL Symptoms/Presentation:**
  - Peripheral Vascular Insufficiency – Gangrenous Fingertips & Toes/Claudication
- **TYPICAL Clinical Signs:**
  - **Vitals:**
    - Normal (Tachy if recent cigarette), (Tachypnoea if COPD)
  - **Other:**
    - Claudication
    - Chronic Arterial Ulcers
    - Gangrenous Toes/Feet/Fingers
  - **Signs of Causes:**
    - \*\*\*TAR STAINING FROM SMOKING



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