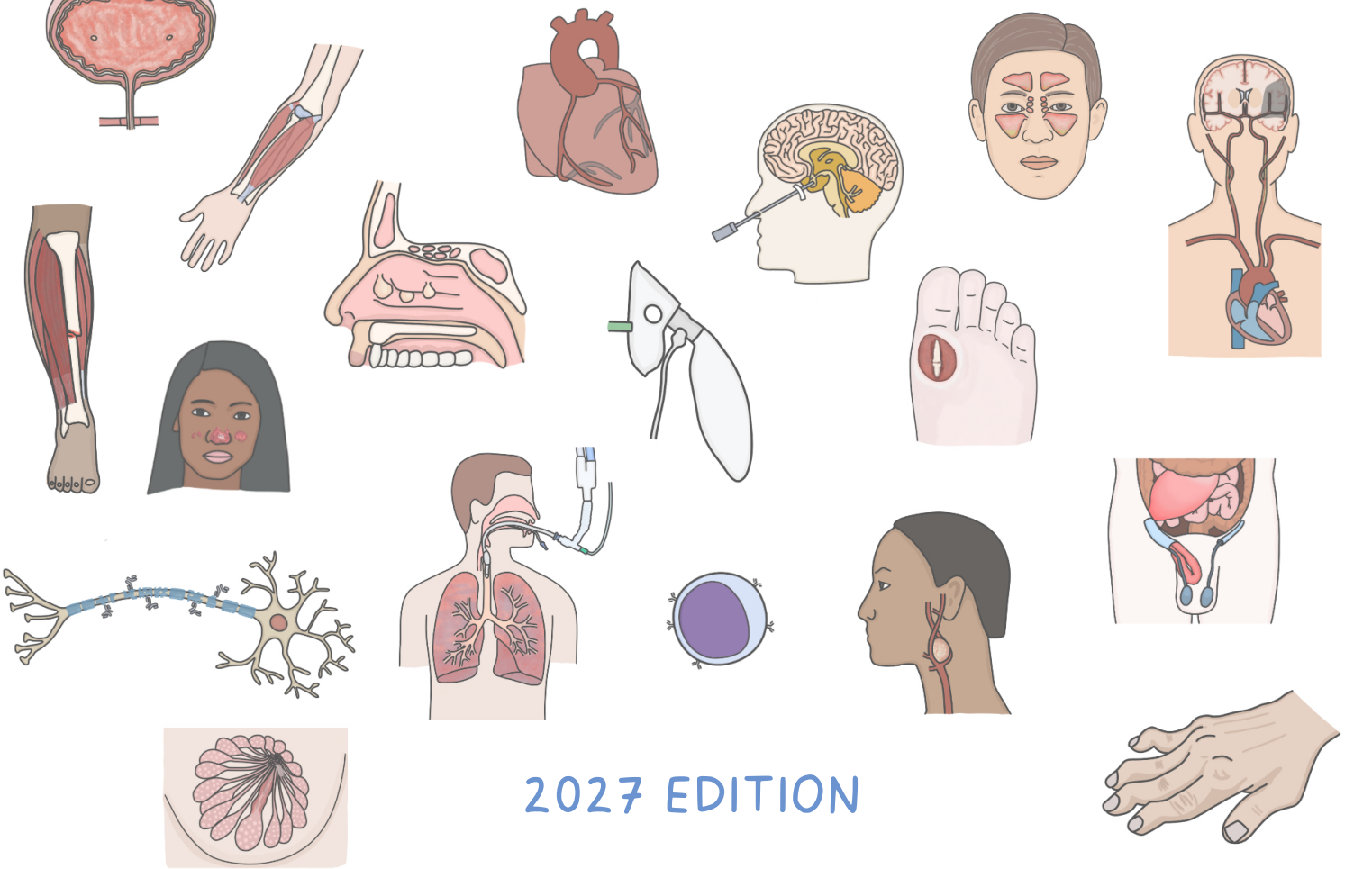


ZERO TO FINALS

FINALS REVISION

DR THOMAS WATCHMAN



2027 EDITION

ZERO TO FINALS

Visit

members.zerotofinals.com

for notes, flashcards, practice questions and more.

Finals Revision
Third Edition
November 2026

Written and illustrated by
Dr Thomas Watchman
BSc (Psychology) MSc (Medical Education) MbChB (hons) MRCGP MRCP (UK) DCH DRCOG FHEA
General Practitioner (GP)

Copyright Zero to Finals 2026. All rights reserved.

No part of this book can be reproduced or transmitted in any way without prior permission from Dr Thomas Watchman at Zero to Finals. Email: tom@zerotofinals.com.

This book may contain errors. For revision purposes only.
Do not use to guide patient management.

Contents

1	Cardiolovascular	8
2	Endocrinology	22
3	Renal Medicine	32
4	Urology	34
5	Respiratory	42
6	Infectious Diseases	54
7	Gastroenterology	61
8	Surgery	71
9	Breast	82
10	Musculoskeletal	86
11	Haematology	102
12	Dermatology	114
13	Ear, Nose and Throat	123
14	Ophthalmology	129
15	Neurology	134
16	Mental Health & Neurodiversity	145
17	Gynaecology	155
18	Sexual Health	165
19	Maternity & Reproductive Health	168
20	Paediatrics	176
21	Older Adults	200
22	Palliative Care	205
23	Acute and Emergency	207
24	Social and Population Health	212
25	Prescribing	214
26	Data Interpretation	218

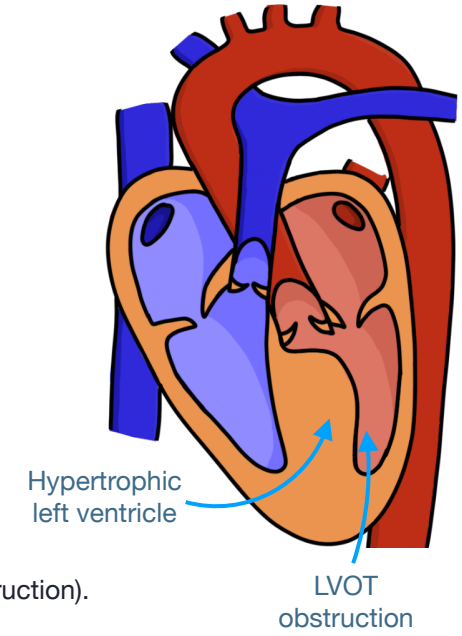
Antibiotic	Gram +ve	Gram -ve	Anaerobes	Atypicals
Amoxicillin	✔	◐		
Co-amoxiclav	✔	✔	✔	
Clarithromycin	✔	◐		✔
Clindamycin	✔		✔	
Gentamicin		✔		
Ciprofloxacin	◐	✔		◐
Metronidazole			✔	
Doxycycline	◐	◐		✔
Vancomycin	✔		◐	

Autoimmune Condition	Relevant Autoantibodies
Rheumatoid arthritis	Rheumatoid factor Anti-cyclic citrullinated peptide (anti-CCP)
Systemic lupus erythematosus (SLE)	Anti-nuclear antibodies (ANA) Anti-double stranded DNA (anti-dsDNA)
Sjögren's syndrome	Anti-SS-A (anti-Ro) Anti-SS-B (anti-La)
Hashimoto's thyroiditis	Anti-thyroid peroxidase (anti-TPO) Anti-thyroglobulin (anti-Tg)
Graves' disease	TSH receptor antibodies Anti-thyroid peroxidase (anti-TPO) Anti-thyroglobulin (anti-Tg)
Myasthenia gravis	Anti-acetylcholine receptor (anti-AChR) Anti-muscle-specific kinase (anti-MuSK)
Coeliac disease	Anti-tissue transglutaminase antibodies (anti-TTG) Anti-endomysial antibodies (anti-EMA)
Vasculitis	Anti-neutrophil cytoplasmic antibodies (ANCA) MPO-ANCA (MPA + EGPA) and PR3-ANCA (GPA)
Autoimmune hepatitis (type 1)	Anti-nuclear antibodies (ANA) Anti-smooth muscle antibodies (anti-SMA) Anti-soluble liver antigen (anti-SLA/LP)
Systemic sclerosis	Anti-nuclear antibodies (ANA) Anti-centromere antibodies (limited cutaneous SS) Anti-Scl-70 antibodies (diffuse cutaneous SS)

Endocrine Condition	Dynamic Test
Cushing's syndrome	Dexamethasone suppression test
Adrenal insufficiency	Short Synacthen test
Acromegaly	Growth hormone suppression test
Diabetes insipidus	Water deprivation test

Hypertrophic Obstructive Cardiomyopathy (HOCM)

Pathophysiology: Left ventricular septal hypertrophy obstructs blood outflow (LVOT obstruction).



Clinical Features
- May be asymptomatic.
- Syncope.
- Sudden cardiac death.
- Murmur: Ejection systolic at the lower left sternal border.

Investigations
- Echocardiogram.
- Genetic testing (autosomal dominant inheritance).

Management
- Lifestyle: Avoid intense exercise, heavy lifting, and dehydration.
- Medications: Beta blockers.
- Avoid: Nitrates, ACE inhibitors.
- Surgery: Septal myectomy (removal of part of the septum to relieve obstruction).
- Devices: Implantable cardioverter defibrillator (ICD) for high-risk patients.

ICD Function: Continuously monitors the heart and delivers shocks for ventricular tachycardia or fibrillation.

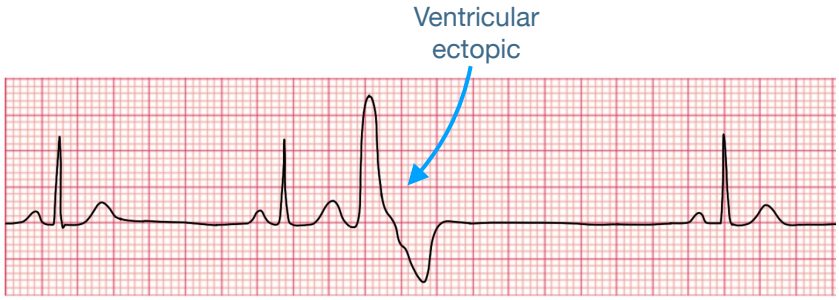
Differential Diagnosis Causing Syncope
- Vasovagal Syncope: Reflex-related fainting.
- Postural Hypotension: Blood pressure drop upon standing.
- Structural Heart Disease (e.g., aortic stenosis, HOCM).
- Arrhythmias (e.g., heart block, ventricular arrhythmias).

Takotsubo Cardiomyopathy (another type of cardiomyopathy unrelated to HOCM)
- Definition: Sudden left ventricular dysfunction and weakness.
- Trigger: Severe emotional stress (e.g., death of a partner). (Nickname: Broken heart syndrome).

Atrial Fibrillation

Effects of AF
- Irregularly irregular ventricular contractions.
- Tachycardia (not always).
- Heart failure: Impaired ventricular filling during diastole.
- Increased stroke risk: Stagnant blood in the left atrium promotes thrombus formation.

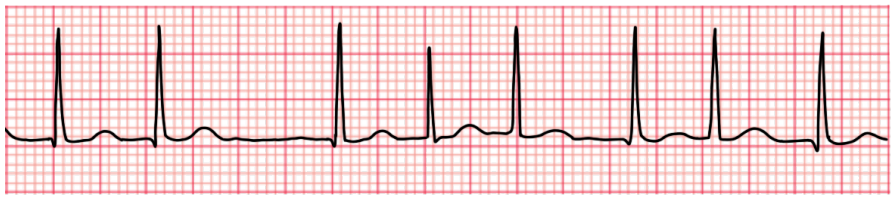
Causes of an Irregularly Irregular Rhythm
- Atrial fibrillation.
- Ventricular ectopics: Appear as isolated, random, broad QRS complexes on an otherwise normal ECG.



Causes of AF ("SMITH" Mnemonic)
- S: Sepsis.
- M: Mitral valve pathology (e.g., stenosis).
- I: Ischaemic heart disease.
- T: Thyrotoxicosis.
- H: Hypertension.
- Other causes: Alcohol, cocaine.

ECG Findings

- Absent P waves.
- Narrow QRS complexes.
- Irregularly irregular ventricular rhythm.

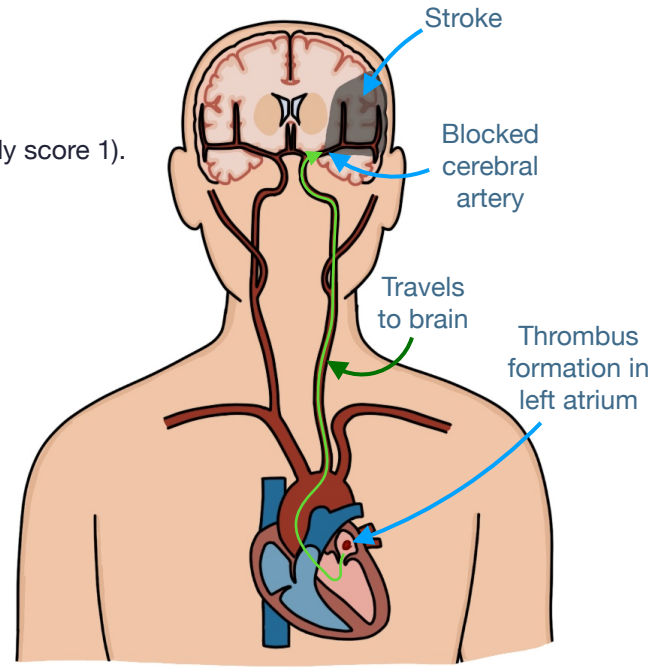


Paroxysmal AF

- Recurrent episodes that spontaneously resolve back to sinus rhythm.

Management

- Rate control (first-line):
  - Beta blockers (e.g., atenolol, bisoprolol).
  - Calcium channel blockers (e.g., diltiazem, verapamil) (avoid in heart failure with reduced ejection fraction).
  - Digoxin: Only in sedentary patients with persistent AF (monitor closely for toxicity).
- Anticoagulation:
  - Direct-acting oral anticoagulants (DOACs): First-line.
  - Warfarin: Second-line (target INR 2-3).
- CHA2DS2-VASc Score
  - 0: No anticoagulation.
  - 1: Consider anticoagulation in men (women automatically score 1).
  - 2+: Offer anticoagulation.



CHA2DS2-VASc

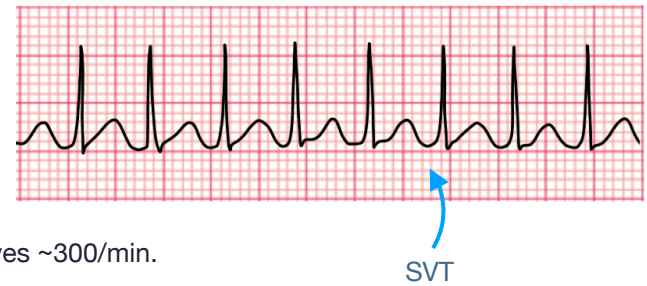
- C: Congestive heart failure.
- H: Hypertension.
- A2: Age ≥75 (scores 2).
- D: Diabetes.
- S2: Stroke/TIA previously (scores 2).
- V: Vascular disease.
- A: Age 65-74.
- S: Sex (female).

Bleeding Risk: ORBIT Score.

Supraventricular Tachycardia (SVT)

Narrow Complex Tachycardia

- Definition: QRS duration <0.12 seconds (3 small squares).
- Differentials:
  - Sinus tachycardia.
  - Supraventricular tachycardia.
  - Atrial fibrillation.
  - Atrial flutter: Saw-tooth ECG appearance; repeated P waves ~300/min.

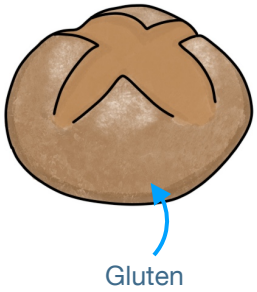


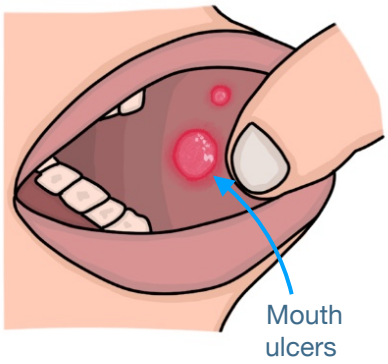
Management (Stepwise)

1. Vagal manoeuvres: Valsalva manoeuvre (e.g., blow into syringe) and carotid sinus massage.
2. Adenosine:
   - Doses: 6 mg → 12 mg → 18 mg if needed.
   - Rapid IV bolus into a large proximal cannula.
   - Warn patients of transient "impending doom" feeling.
   - Avoid in asthma, COPD, or heart failure.
3. Verapamil or beta blocker.
4. Synchronised DC cardioversion (first-line for life-threatening features).

Coeliac Disease

Overview
- Autoimmune reaction to gluten.
- Associated with type 1 diabetes and thyroid disease.
- Management: Lifelong gluten-free diet.





Antibodies
- First-line: Anti-tTG (tissue transglutaminase).
- Second-line: Anti-EMA (endomysial).
- Test total IgA to exclude IgA deficiency.

Presentation
- Age: Any (often children).
- Symptoms: Asymptomatic, failure to thrive, diarrhoea, bloating, fatigue, weight loss, mouth ulcers.

Dermatitis Herpetiformis: Itchy, blistering rash, typically on knees, elbows and natal cleft.

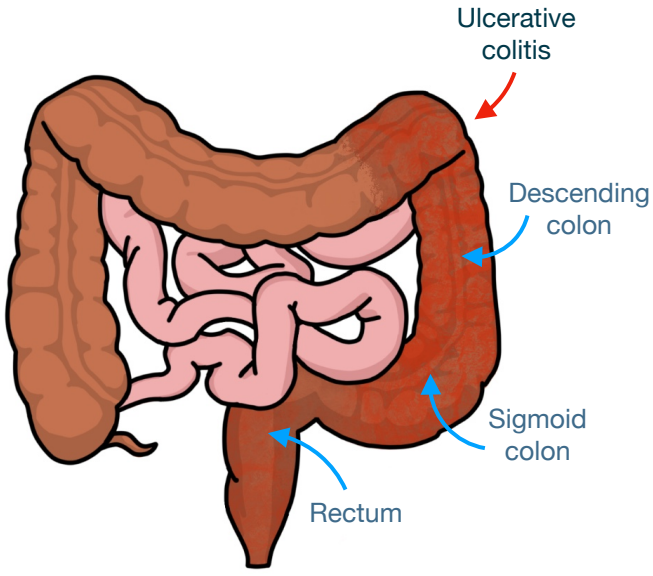
Diagnosis (Continue Eating Gluten Throughout)
- Suspected (have a low threshold) → Test serum tTG antibodies + total IgA.
- Antibodies positive → Refer to gastro for endoscopy with duodenal biopsy to confirm.

Complications
- Nutritional deficiencies, anaemia, osteoporosis.
- Neurological: Peripheral neuropathy, cerebellar ataxia, epilepsy.
- Hyposplenism (immunodeficiency to encapsulated bacteria).
- Ulcerative jejunitis.
- Malignancies: EATL, Non-Hodgkin lymphoma, small bowel adenocarcinoma.

Inflammatory Bowel Disease (IBD)

Presenting Features
- Ulcerative colitis: More acute, bloody diarrhoea, mucus, urgency/tenesmus, left-sided abdominal pain.
- Crohn's: Persistent non-bloody diarrhoea, abdominal pain (often right iliac fossa), weight loss, fatigue.
- Other features: Finger clubbing, mouth ulcers, pallor, perianal disease (Crohn's).

Crohn's Disease (Mnemonic: NESTS)
- N: No blood/mucus (PR bleeding less common).
- E: Entire GI tract.
- S: Skip lesions (patchy areas) on endoscopy.
- T: Terminal ileum & Transmural inflammation.
- S: Strictures + fistulas.

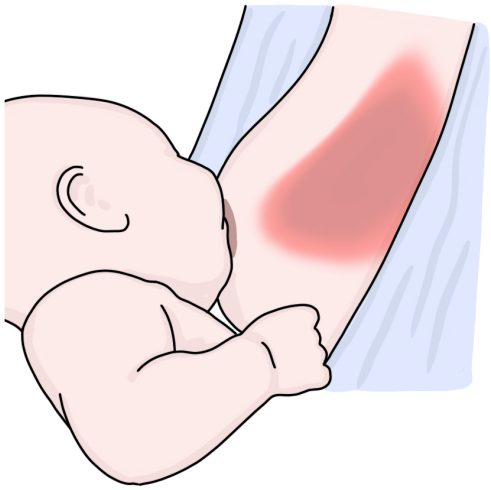


Ulcerative Colitis (Mnemonic: CLOSEUP)
- C: Continuous inflammation (no skip lesions).
- L: Limited to colon & rectum.
- O: Only superficial mucosa affected.
- S: Smoking may be protective.
- E: Excretes blood & mucus.
- U: Use aminosalicylates.
- P: Primary sclerosing cholangitis.

Lactational Mastitis

Basics
- Inflammation of breast tissue in breastfeeding woman due to milk stasis/inflammation.
- Possible associated bacterial infection (most often Staphylococcus aureus).

Presentation
- Breast pain and tenderness (unilateral).
- Focal erythema.
- Local warmth and inflammation.
- Nipple discharge.
- Fever / flu-like symptoms.



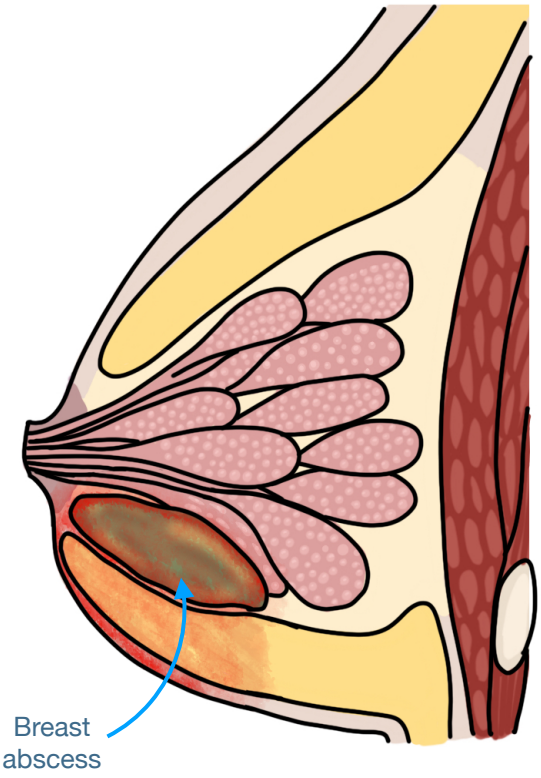
Management
- Continue normal breastfeeding (express if feeding too painful).
- Analgesia (ibuprofen / paracetamol).
- Cold compresses.
- Antibiotics if not improving after 24 hours or infected nipple fissure:
  - Flucloxacillin first line.
  - Alternatives: Erythromycin or clarithromycin.
- No improvement after 48 hours → reassess, breast-milk culture, switch to co-amoxiclav.

Breast Abscess

Basics
- Localised collection of pus, usually from bacterial infection.
- May be lactational (associated with breastfeeding) or non-lactational.
- Staphylococcus aureus most common.
- Anaerobes possible if non-lactational.

Risk Factors
- Recent mastitis.
- Smoking.
- Nipple damage/piercing.
- Diabetes.
- Underlying breast disease (e.g., cancer).

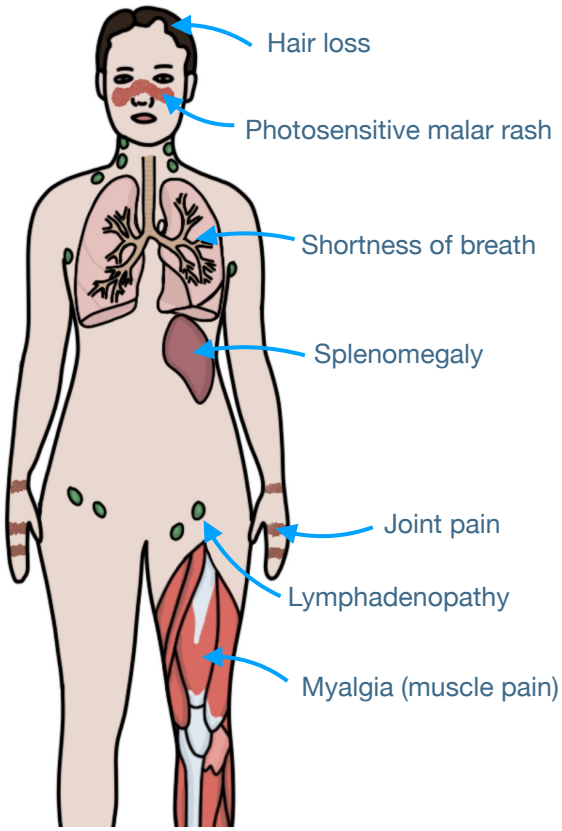
Presentation
- Painful, tender, warm, erythematous breast lump.
- Fluctuant swelling suggests abscess.
- Fever/systemic illness.



Management
- Hospital/breast-team referral.
- Urgent breast ultrasound.
- Broad-spectrum antibiotics (e.g., co-amoxiclav).
- Drainage:
  - Usually needle aspiration.
  - Incision and drainage if required.
  - Send aspirate for culture and sensitivities.

Systemic Lupus Erythematosus (SLE)

Pathophysiology
- Inflammatory autoimmune connective tissue disorder.
- Associated with anti-nuclear antibodies.

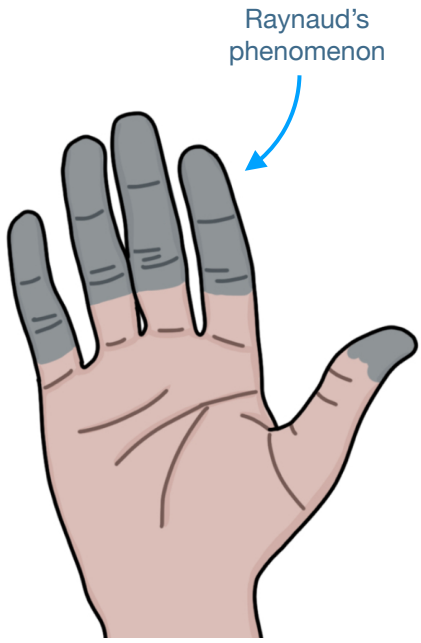


More Common
- Women. Young to middle-aged adults.
- Asian, African, Caribbean and Hispanic ethnicity.

Clinical Features
- Course: Relapsing-remitting with flares.
- Symptoms:
  - Fatigue, weight loss, arthralgia, non-erosive arthritis.
  - Myalgia, fever, photosensitive malar rash.
  - Lymphadenopathy, splenomegaly.
  - Shortness of breath, pleuritic chest pain.
  - Mouth ulcers, hair loss, Raynaud's, oedema.

Complications
- Cardiovascular disease, infections, anaemia.
- Pericarditis, pleurisy, interstitial lung disease.
- Lupus nephritis.

Investigations
- Autoantibodies:
  - Anti-nuclear antibodies (ANA) (sensitive but not specific).
  - Anti-double stranded DNA (anti-dsDNA) (highly specific).
- Blood tests:
  - FBC: Anaemia, leukopenia, thrombocytopenia.
  - ↑ ESR.
  - Complement (C3, C4): ↓ in active disease.
- Urinalysis: Proteinuria (lupus nephritis). Renal biopsy if needed.



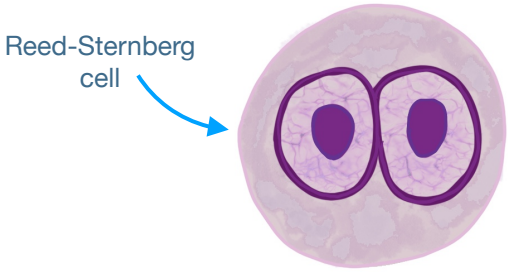
Treatments
- Hydroxychloroquine.
- NSAIDs.
- Steroids (e.g., prednisolone).
- Severe/Resistant: DMARDs or biologics.

Raynaud's Management
- Cold trigger: Fingers go white → blue → red.
- Primary or secondary (e.g., systemic sclerosis, SLE or Sjögren's).
- Refer if suspecting secondary.
- Keep warm. Avoid smoking. Reduce caffeine.
- Worsened by non-selective beta blockers.
- Medical prophylaxis: Nifedipine.

Antiphospholipid Syndrome
- May/may not be associated with SLE.
- Features: Thrombosis (DVT/PE/stroke) + recurrent miscarriage.
- Antiphospholipid antibodies (lupus anticoagulant and anticardiolipin antibodies).
- Management: Long-term warfarin (INR 2-3). LMWH + aspirin in pregnancy.

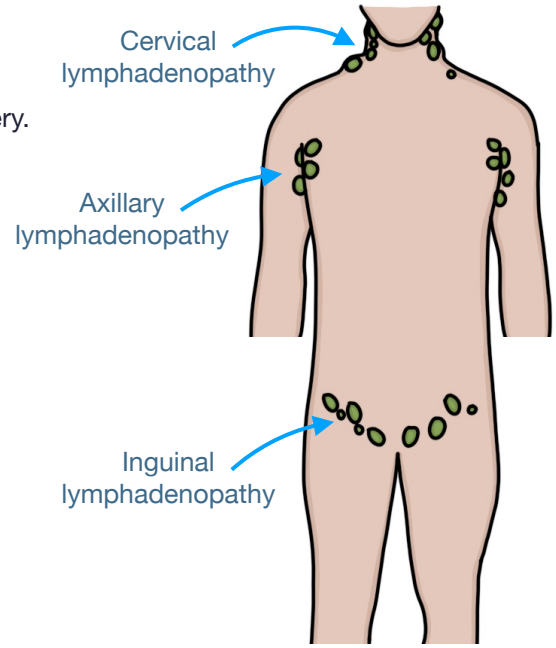
Lymphoma

Hodgkin's Lymphoma
- Bimodal age distribution: 20-25 & 80 years.
- Reed-Sternberg cells present.



Non-Hodgkin's Lymphoma
- Diffuse large B-cell lymphoma: Rapid painless mass, older adults.
- Burkitt lymphoma: Associated with EBV and HIV.
- MALT lymphoma:
  - Mucosa-associated, usually stomach.
  - Linked to H. pylori infection and Sjogren's.
- Waldenstrom's macroglobulinaemia: Excessive IgM from B-cells.

Presentation
- Lymphadenopathy: Neck, axilla, inguinal; non-tender, firm/rubbery.
- B symptoms:
  - Fever.
  - Weight loss.
  - Night sweats.
- Hodgkin's lymphoma: Lymph node pain after alcohol intake.



Diagnosis: Lymph node biopsy.

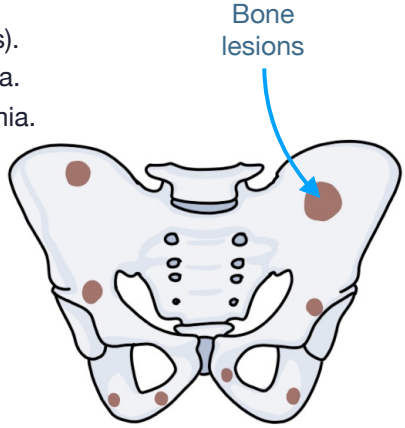
Staging: Lugano Classification
- Stage I: One node/group.
- Stage II: Multiple nodes, same side of diaphragm.
- Stage III: Nodes both above & below diaphragm.
- Stage IV: Widespread, non-lymphatic organs.

Treatment: Chemotherapy and radiotherapy.

Myeloma

Definitions
- Multiple myeloma: Multi-site bone marrow involvement.
- MGUS: Paraprotein, no symptoms; ~1%/yr myeloma risk.
- Smouldering myeloma: Abnormal plasma cells + paraprotein, no organ damage; ~10%/yr myeloma risk.

Pathophysiology
- Mutant plasma cells proliferate and produce paraprotein (abnormal antibodies).
- Bone marrow suppression causes anaemia, leukopenia and thrombocytopenia.
- ↑ Osteoclast and ↓ osteoblast activity causes bone lesions and hypercalcaemia.



CRAB Features
- C: Hypercalcaemia.
- R: Renal failure.
- A: Anaemia (normocytic, normochromic).
- B: Bone lesions/pain.

Shingles

Cause: Varicella-zoster virus.

Risk Factors: Elderly, immunocompromised.

Presentation
- Single dermatome (commonly T1-L2).
- Painful, neuropathic rash with possible systemic symptoms.



Rash Course
- Prodrome: 2–3 days of pain/sensation changes.
- Maculopapular rash: Specific dermatome.
- Vesicles: 1–2 days later.
- Ulceration & crusting: 4–5 days after vesicles.
- Healing: 2–4 weeks.

Complications: Post-herpetic neuralgia (persistent pain).

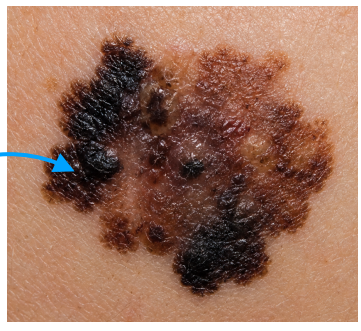
Ophthalmic Involvement
- Hutchinson's sign (rash on nose tip).
- Red/painful eye, photophobia.
- Urgent ophthalmology involvement required.

Treatment:
- Preferably started within 72 hours. Consider up to one week after onset.
- Oral antivirals: Aciclovir, valaciclovir or famciclovir.

Vaccination
- Shingrix: 2 doses, 6-12 months apart.
- Eligible: Adults turning 65 from 1/9/23, people aged 70-79 and severely immunosuppressed aged ≥18.
- Benefits: Reduces shingles, neuralgia, complications.
- Given even if previous shingles.

Skin Cancer

Risk Factors
- Pale/freckly skin, sunburn/sun exposure, many moles.
- Family history.
- Immunosuppression.



Melanoma
- Most dangerous, least common.
- Origin: Melanocytes.
- Features:
  - ABCDE: Asymmetry, Border irregularity, Colour variation, Diameter >6 mm, Evolving.
  - May be pigmented or amelanotic.
- Subtypes:
  - Superficial spreading (flat, irregular borders).
  - Nodular (raised).
  - Lentigo maligna (flat, brown, irregular).
- Metastasis: Lungs, liver, bones, brain.



Pre-Existing Diabetes in Pregnancy

- Pre-conception: Optimise glucose control. 5 mg folic acid until 12 weeks gestation.
- During pregnancy: Metformin and/or insulin (stop other oral medications).
- Retinopathy screening at booking and 28 weeks.
- Renal monitoring.
- Planned delivery at 37-38+6 weeks.
- Type 1 diabetes: Insulin and dextrose infusion during labour.
- Postnatal: Reduce insulin doses, monitor for hypoglycaemia.

Pregnancy-Related Rashes

Melasma ("Mask of Pregnancy")

- Symmetrical facial hyperpigmentation.
- Oestrogen and sun related.
- Management: Reassurance, sun protection, camouflage.



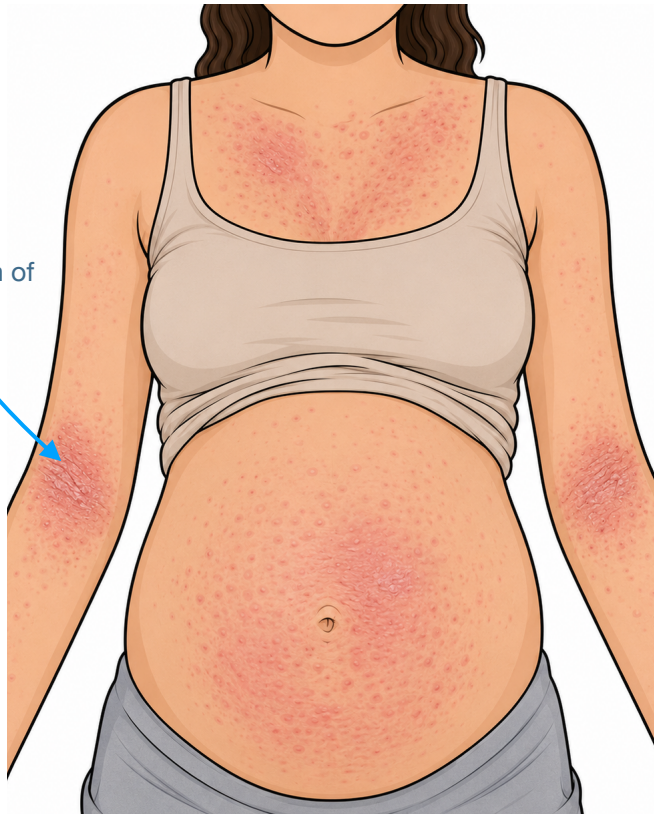
Pyogenic Granuloma

- Rapidly growing benign vascular nodule, bleeds easily.
- Usually resolves post-delivery. Surgical removal may be considered.



Atopic Eruption of Pregnancy

- Eczema-type: Eczematous, inflamed, red and itchy skin.
- Prurigo-type: Intensely itchy papules; abdomen, back and limbs.
- Typically starts in 1st and 2nd trimester and improves after delivery.
- Management: Emollients and topical steroids.



Klinefelter Syndrome

Genetics: Usually 47,XXY due to an extra X chromosome.

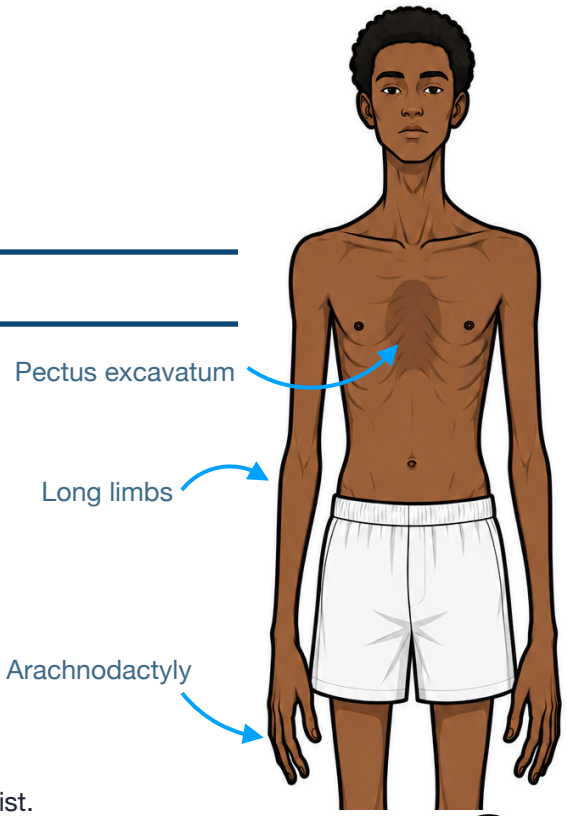
Features
- Become more apparent around puberty.
- Tall stature, long limbs, narrow shoulders.
- Small, firm testes with reduced testosterone production.
- Gynaecomastia, reduced muscle mass and reduced libido.
- Infertility (azoospermia).
- Mild speech/language or learning difficulties.
- Anxiety, ADHD or ASD.

Treatment: Testosterone replacement therapy.

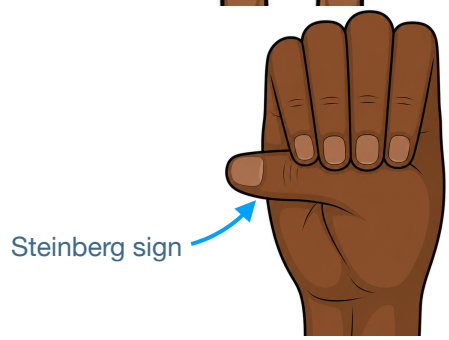
Marfan Syndrome

Overview
- Autosomal dominant connective-tissue disorder.
- FBN1 mutation affecting fibrillin-1.

Features
- Tall stature, long limbs, increased arm-span:height ratio.
- Arachnodactyly: Long, slender fingers.
- High-arched palate, joint hypermobility.
- Pectus carinatum or pectus excavatum.
- May also develop scoliosis.
- Steinberg sign: Thumb extends beyond the ulnar border.
- Walker-Murdoch sign: Thumb and little finger overlap around wrist.



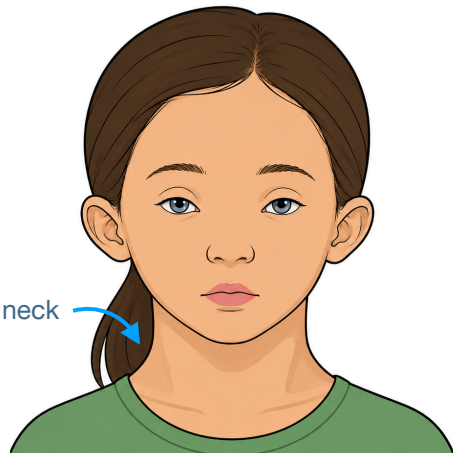
Associated Conditions
- Ectopia lentis (lens dislocation).
- Aortic root dilatation, aortic regurgitation, ascending aortic aneurysm.
- Aortic dissection or rupture.
- Mitral valve prolapse and regurgitation.
- Spontaneous pneumothorax.
- Joint instability and dislocation.



Turner Syndrome

Genetics: 45,X due to complete or partial absence of one X chromosome.

Features
- Short stature, webbed neck, low posterior hairline.
- Broad chest with widely spaced nipples.
- Cubitus valgus, short 4th metacarpal, high-arched palate.
- Epicanthic folds, downward-sloping palpebral fissures.
- Hypogonadism, delayed or incomplete puberty, infertility.

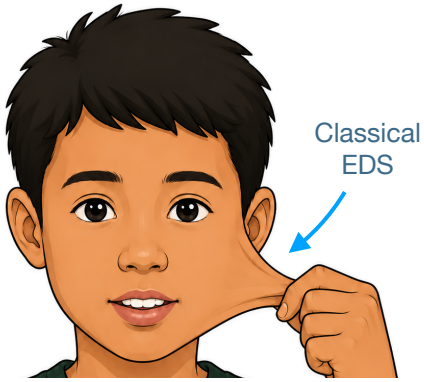


Ehlers-Danlos Syndrome

Overview
- Group of inherited connective-tissue disorders caused by abnormalities of collagen or related proteins.
- Can affect skin, joints, ligaments, blood vessels and internal organs.
- Characteristic features include joint hypermobility, skin hyperextensibility and tissue fragility.

Hypermobile EDS (hEDS)
- Most common type of EDS.
- Generalised joint hypermobility with chronic/recurrent joint pain.
- Recurrent dislocations/subluxations, especially shoulders and hips.
- Soft mildly hyperextensible skin and easy bruising.
- May have autonomic symptoms, headaches, GI symptoms, pelvic-floor problems and eye problems.
- Often appears autosomal dominant, but no single causative gene identified.

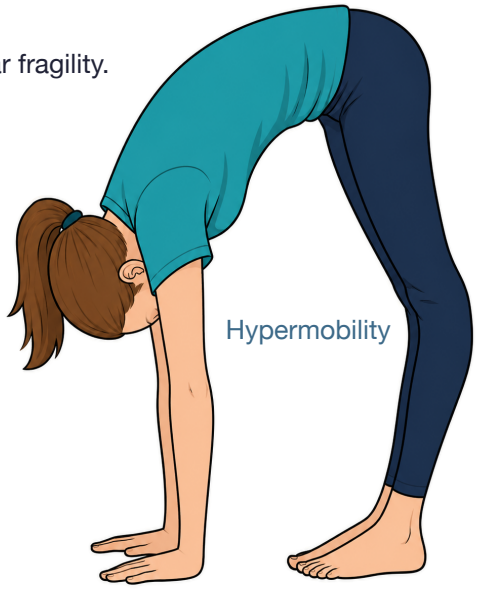
Classical EDS
- Very stretchy, velvety skin.
- Severe hypermobility.
- Easy bruising and poor wound healing.
- Usually autosomal dominant.



Vascular EDS
- Most serious type. Autosomal dominant.
- Thin translucent skin, easy bruising, fragile arteries/organs (risk of rupture).

Kyphoscoliotic EDS
- Neonatal hypotonia, progressive kyphoscoliosis, hypermobility, ocular fragility.
- Autosomal recessive.

Beighton Score
- Used to assess generalised joint hypermobility.
- Maximum 9 points. Points for:
  - Palms flat on floor with knees straight (+1).
  - Hyperextension of elbows (+1 per elbow).
  - Hyperextension of knees (+1 per knee).
  - Thumb touching forearm (+1 per hand).
  - Little finger extending beyond 90° (+1 per hand).
- Score ≥6/9 → generalised hypermobility.



Postural Orthostatic Tachycardia Syndrome (POTS)
- Due to autonomic dysfunction.
- Excessive HR rise on standing → palpitations, dizziness, presyncope, fatigue, nausea/headache.
- Management: Good hydration, increased salt intake, compression garments, avoidance of triggers.
- Specialist medications: Fludrocortisone, midodrine, beta-blockers, ivabradine.

Cerebral Palsy

Overview
- Permanent, non-progressive neurological disorder from brain damage in the fetus or infant.
- Ranges from severe disability to mild coordination issues.

Overdose

General Management
- ABCDE assessment. Cardiac monitoring as required (e.g., TCA overdose).
- Activated charcoal may be used for selected ingestions if given early and the airway is protected.
- Treat seizures with benzodiazepines.
- Correct hypoglycaemia, electrolyte abnormalities, acidosis and temperature disturbance.

Paracetamol Overdose
- May initially be asymptomatic. Risk of hepatic necrosis and acute liver failure.
- Check paracetamol concentration at the appropriate time after ingestion. Plot on nomogram.
- Treat with IV n-acetylcysteine (NAC) according to the relevant treatment nomogram/protocol.

Opioid Overdose
- Classic triad: Reduced consciousness, respiratory depression and pinpoint pupils.
- Management: Airway/ventilatory support + naloxone.
- Observe for recurrent toxicity because naloxone may wear off before the opioid.

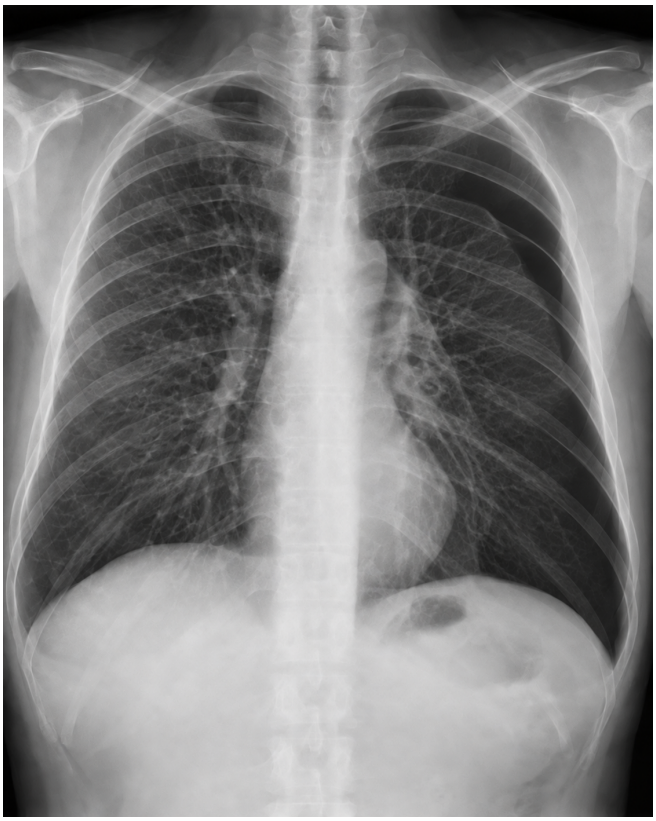
TCA Overdose
- Can cause anticholinergic features, seizures, hypotension and arrhythmias.
- ECG may show QRS widening.
- Management: IV sodium bicarbonate + supportive care.

Substance	Treatment of Overdose / Toxicity
Paracetamol	Acetylcysteine
Opioids	Naloxone
Benzodiazepines	Flumazenil (selected cases / specialist advice)
Beta blockers	Glucagon for heart failure or cardiogenic shock Atropine for symptomatic bradycardia
Calcium channel blockers	Calcium chloride or calcium gluconate
Cocaine	Diazepam
Cyanide	Hydroxocobalamin / dicobalt edetate
Methanol (e.g., solvents or fuels) **Ethylene glycol (e.g., antifreeze)**	Fomepizole or ethanol (alcohol)
Carbon monoxide	100% oxygen

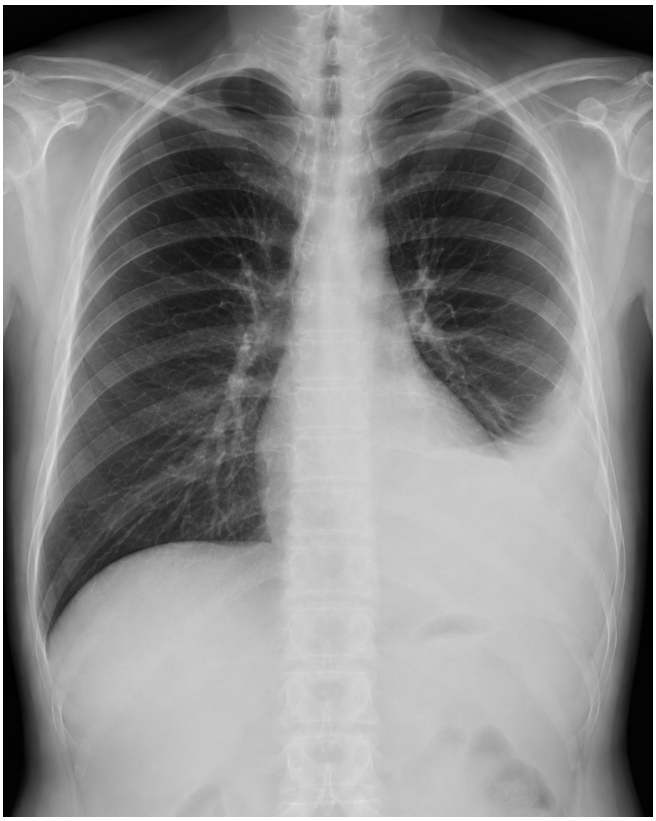
Poisoning

Essentials
- ABCDE → identify the poison → stop further exposure → supportive care → specific antidote.
- TOXBASE: Clinical reference for specific poisons.

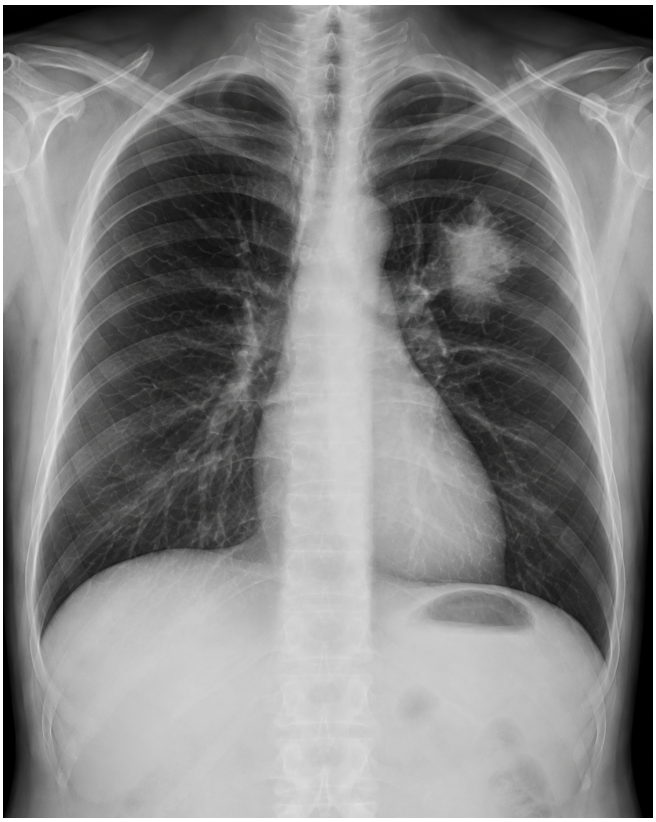
Carbon Monoxide Poisoning
- Produced by incomplete combustion. Colourless and odourless.
- Presentation: Headache, dizziness, nausea, confusion, collapse/coma.
- Screening: Point-of-care CO breath monitor. Diagnosis: Carboxyhaemoglobin blood test.
- Management: High-concentration oxygen. Hyperbaric oxygen in severe cases.



Pneumothorax: Pleural line, no peripheral markings.



Pleural effusion: Blunted costophrenic angle, meniscus.



Lung cancer: Mass (pictured). May also feature hilar enlargement, collapse, pleural effusion (not shown).



Cannonball metastases: Most classically metastatic renal cell carcinoma.