ZERO TO GP

AKT REVISION

DR THOMAS WATCHMAN

2026 EDITION

Infection	Notable Organisms	Typical Antimicrobial Choice
Community-acquired pneumonia	Streptococcus pneumoniae Haemophilus influenzae	Amoxicillin, doxycycline, clarithromycin
Tonsillitis	Group A streptococcus (Streptococcus pyogenes)	Phenoxymethylpenicillin
Acute sinusitis	Usually viral Streptococcus pneumoniae	Phenoxymethylpenicillin
Otitis media	Streptococcus pneumoniae	Amoxicillin
Otitis externa	Pseudomonas aeruginosa Staphylococcus aureus	Acetic acid Neomycin, gentamicin, ciprofloxacin
Acne	Propionibacterium acnes	Lymecycline, doxycycline
Cellulitis	Staphylococcus aureus	Flucloxacillin
Non-lactational mastitis	Staphylococcus aureus, enterococci, anaerobes	Co-amoxiclav
Urinary tract infections	Escherichia coli Klebsiella pneumoniae	Nitrofurantoin Trimethoprim
Pyelonephritis	Escherichia coli Klebsiella pneumoniae	Cefalexin
C. diff	Clostridium difficile	Vancomycin
Acute diverticulitis	Gram-negative rods (E. coli) Anaerobes	Co-amoxiclav
H. Pylori	Helicobacter pylori	Omeprazole, amoxicillin and clarithromycin (7 days)
Bacterial vaginosis	Anaerobes (e.g., Gardnerella vaginalis)	Metrodnidazole
Chlamydia	Chlamydia trachomatis	Doxycycline 100 mg BD for 7 days
Gonorrhoea	Neisseria gonorrhoea	IM Ceftriaxone 1g
Pelvic inflammatory disease	Chlamydia, gonorrhoea, mycoplasma genitalium	IM Ceftriaxone 1g STAT + doxycycline & metronidazole for 14 days
Bacterial meningitis	Neisseria meningitidis Streptococcus pneumoniae	Benzylpenicillin (awaiting transfer) Ceftriaxone (in hospital)
Influenza	Influenza A and B	Oral oseltamivir or inhaled zanamivir
Malaria	Plasmodium falciparum	Oral artemether with lumefantrine Intravenous artesunate
Shingles	Varicella zoster virus	Aciclovir
Coldsores	Herpes simplex virus 1	Aciclovir
Genital herpes	Herpes simplex virus 2	Aciclovir

Age	Adrenaline Dose For Anaphylaxis (1mg in 1ml, 1:1000)
Over 12 years	500 mcg (0.5ml)
6 - 12 years	300 mcg (0.3ml)
6 months - 6 years	150 mcg (0.15ml)
Under 6 months	100-150 mcg (0.1-0.15ml)

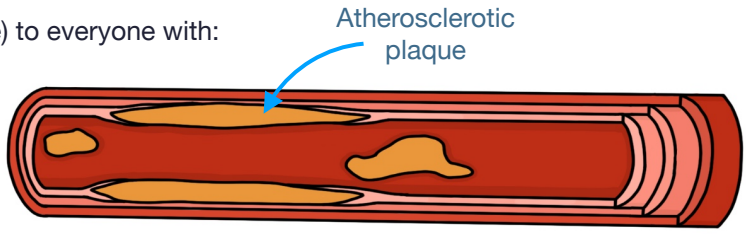
Age	Benzylpenicillin Dose For Meningococcal Disease (IM/IV)
Over 9 years	1200 mg
1 - 9 years	600 mg
Under 1 year	300 mg

Age	Routine Childhood Vaccine Schedule
8 weeks	**6-in-1 (DTaP/IPV/Hib/HepB)**: Diphtheria, tetanus, pertussis, polio, Haemophilus influenzae type b, hepatitis B vaccine
	Meningococcal group B
	Rotavirus
12 weeks	Same as 8 weeks
16 weeks	**6-in-1 (DTaP/IPV/Hib/HepB)**: Diphtheria, tetanus, pertussis, polio, Haemophilus influenzae type b, hepatitis B vaccine
	Pneumococcal
12 months	Pneumococcal
	Meningococcal group B
	Measles, mumps, and rubella (MMR)
18 months	**6-in-1 (DTaP/IPV/Hib/HepB)**: Diphtheria, tetanus, pertussis, polio, Haemophilus influenzae type b, hepatitis B vaccine
	Measles, mumps, and rubella (MMR)
3 years 4 months Born before 1/7/24	**4-in-1 (DTaP/IPV):** Diphtheria, tetanus, pertussis, polio
	Measles, mumps, and rubella (MMR)
3 years 4 months Born after 1/7/24	**4-in-1 (DTaP/IPV):** Diphtheria, tetanus, pertussis, polio
12-13 years	HPV
14 years	**3-in-1 (Td/IPV):** Tetanus, diphtheria, polio
	Meningococcal groups A, C, W, and Y
2 - 16 years annually	Live attenuated influenza

CARDIOVASCULAR

Cardiovascular Prevention

Primary Prevention
- QRISK3 >10%: Offer atorvastatin 20 mg. (Can offer below 10% if high risk or preference).
- Monitor LFTs and lipids at 2-3 months and 12 months post-statin initiation.
- Aim >40% reduction in non-HDL cholesterol.
- Statin adverse effects:
  - Transient rise in ALT/AST, <3 x upper limit acceptable.
  - Type 2 diabetes.
  - Myopathy, rhabdomyolysis.
- Atorvastatin 20 mg offered (without QRISK score) to everyone with:
  - Chronic kidney disease (CKD).
  - Type 1 diabetes >10 years or age >40.
  - Familial hypercholesterolaemia.



Other Lipid Lowering Drugs
- Ezetimibe ± bempedoic acid.
- PCSK9 inhibitors (S/C injections, e.g., inclisiran).

Secondary Prevention ("Four As" Mnemonic)
- A: Antiplatelets (Aspirin ± prasugrel or ticagrelor). (Clopidogrel in stroke or peripheral arterial disease).
- A: Atorvastatin 20-80 mg daily.
- A: ACE inhibitor (if diabetes, hypertension, CKD, or heart failure).
- A: A beta blocker in coronary artery disease (usually bisoprolol).

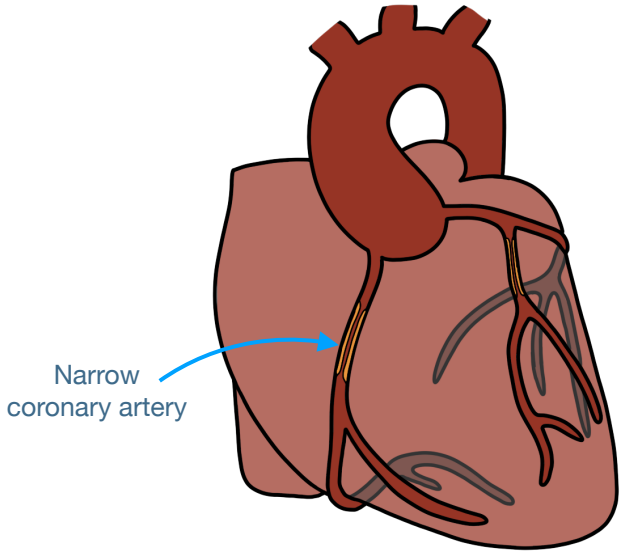
Familial Hypercholesterolaemia (FH)
- Autosomal dominant. Heterozygous 1 in 250.
- Presentation: Very high cholesterol (>7.5 mmol/L adults), tendon xanthomas, family history, premature CVD.
- Diagnosis: Simon Broome criteria, Dutch Lipid Clinic Network Criteria, genetic testing.
- Management:
  - Referral lipid clinic, cascade family screening.
  - Atorvastatin 20mg or rosuvastatin 10mg. Titrate to >50% ↓ LDL cholesterol.

Angina

Types
- Stable: Exertional, relieved by rest.
- Unstable: Randomly at rest (type of ACS).

Management
- Perform ECG (often normal).
- Refer: Rapid access chest pain clinic (stable angina).
- Admission: Possible ACS (unstable angina).

Specialist Investigations
- Cardiac stress test.
- CT coronary angiogram.
- Invasive coronary angiogram.



RENAL & UROLOGY

Chronic Kidney Disease (CKD)

Diagnosis

- Persistent ≥3 months with either:
  - eGFR <60 mL/min/1.73 m².
  - Urine ACR >3 mg/mmol.

G Stage	eGFR
G1	Over 90
G2	60-89
G3a	45-59
G3b	30-44
G4	15-29
G5	Under 15

Common Causes

- Diabetes.
- Hypertension.
- Medications (NSAIDs, lithium).
- Glomerulonephritis.
- Polycystic kidney disease (ultrasound if suspected).

Management

- Optimise hypertension and diabetes.
- Indications for ACE Inhibitors:
  - Diabetes + ACR >3 mg/mmol.
  - Hypertension + ACR >30 mg/mmol.
  - ACR >70 mg/mmol.
- Indications for SGLT-2 inhibitor (eGFR 25-75), either:
  - Type 2 diabetes.
  - ACR ≥ 22.6 mg/mmol (no diabetes).
- CVD primary prevention:
  - Atorvastatin 20 mg in all CKD patients.
- Refer if:
  - Accelerated progression: ↓ in eGFR ≥ 25% + CKD category change or ↓ ≥ 15 mL/min/1.73 m² in 12 months.
  - 5-year risk of RRT >5% (measured with 4-variable Kidney Failure Risk Equation).
  - Urine ACR ≥70 mg/mmol.
  - Complications (e.g., anaemia, bone disease or hyperkalaemia).
  - Uncontrolled hypertension.

A Stage	Albumin:Creatinine Ratio
A1	Under 3 mg/mmol
A2	3-30 mg/mmol
A3	Above 30 mg/mmol

Acute Kidney Injury (AKI)

Diagnosis

- ↑ Creatinine: ≥26 µmol/L within 48 hours or ≥50% within 7 days.
- Urine output: <0.5 ml/kg/hr for >6 hours.

Causes

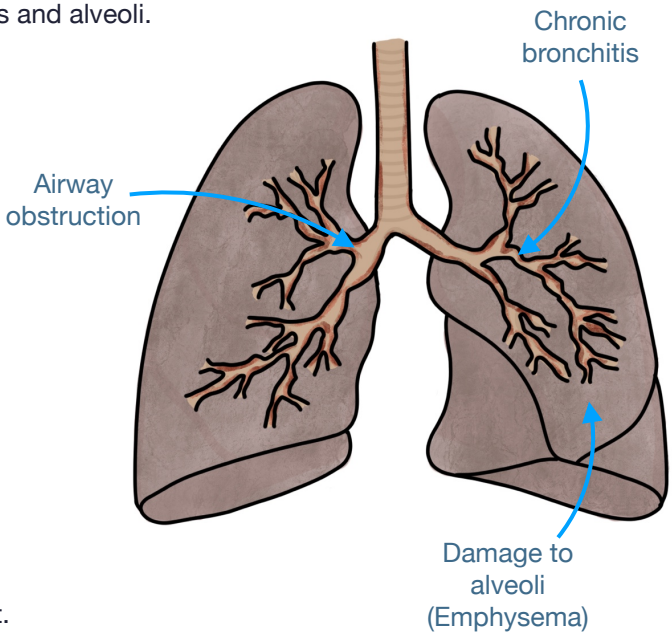
- Pre-renal: Dehydration, shock, heart failure.
- Renal: Acute tubular necrosis, interstitial nephritis, glomerulonephritis, rhabdomyolysis.
- Post-renal: Kidney stones, obstructing tumours, strictures, prostatic hyperplasia, neurogenic bladder.

Management

- Stage 1 AKI (creatinine rise 50–99% within 7 days):
  - Treat underlying cause, adjust medications (stop ACEi, ARB, NSAIDs), monitor creatinine closely.
  - Discuss with medics / renal if concerns.
- Stage 2 or 3 (creatinine rise ≥100% within 7 days) or complications: Admit.

Chronic Obstructive Pulmonary Disease (COPD)

Pathophysiology:
- Airway obstruction: Limits airflow in and out of the lungs.
- Chronic bronchitis: Persistent cough and sputum due to bronchial inflammation.
- Emphysema: Damage and enlargement of alveolar sacs and alveoli.

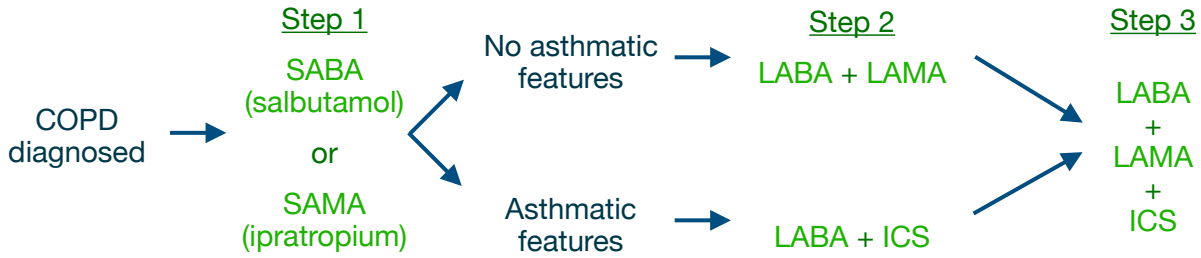


Presentation:
- Risk factor: Long-term smoker.
- Symptoms:
  - Shortness of breath.
  - Chronic cough.
  - Sputum production.
  - Wheezing.
  - Recurrent respiratory infections (especially in winter).

Assessment
- MRC Dyspnoea Scale (1-5):
  - Grade 1: Breathless on strenuous exercise.
  - Grade 2: Breathless walking uphill.
  - Grade 3: Breathlessness slows flat walking.
  - Grade 4: Breathlessness limits walking <100m on flat.
  - Grade 5: Housebound due to breathlessness.
- Spirometry:
  - Obstructive pattern: $FEV_1/FVC < 70\%$.
  - Reversibility test: Little/no response to beta-2 agonists (differs from asthma).

Severity
- Stage 1 - mild: FEV_1 80% predicted.
- Stage 2 - moderate: FEV_1 50-79% predicted.
- Stage 3 - severe: FEV_1 30-49% predicted.
- Stage 4 - very Severe: FEV_1 <30% predicted.

Inhalers



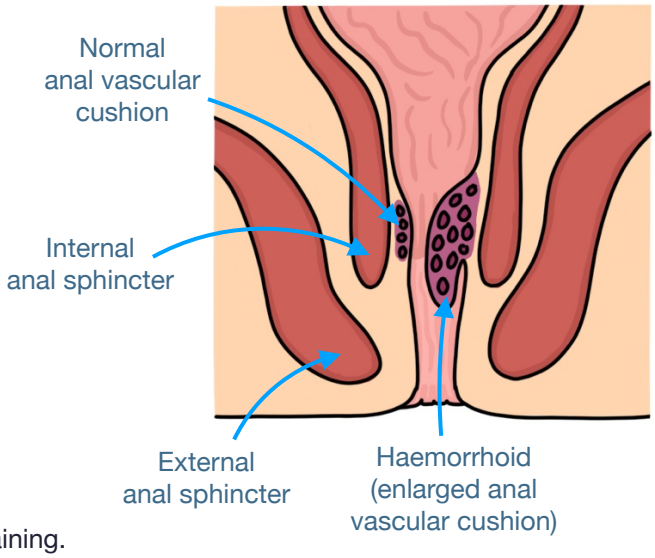
Long-Term Oxygen Therapy (LTOT)
- Indications: Severe COPD with sats <92%, polycythaemia (↑ haemoglobin), cyanosis, cor pulmonale.
- Contraindication: Active smoking.

Cor Pulmonale
- Definition: Right-sided heart failure due to respiratory disease.
- Mechanism: Pulmonary hypertension → ↑ right ventricular workload + back pressure.
- Signs:
  - Increased hypoxia.
  - Peripheral oedema.
  - Raised JVP.
  - Parasternal heave.
  - Tricuspid regurgitation.
  - Hepatomegaly.

Haemorrhoids

Pathophysiology: Enlarged anal vascular cushions.

Risk Factors
- Constipation and straining.
- Pregnancy.
- Obesity.
- Raised intra-abdominal pressure (e.g., weightlifting).



Presentation:
- Rectal bleeding (bright red, post-defecation, on wiping).
- Itching.
- Palpable/visible prolapse.

Classification
- 1st degree: No prolapse.
- 2nd degree: Prolapse on straining, self-reduces.
- 3rd degree: Prolapse, manually reducible.
- 4th degree: Permanent prolapse.

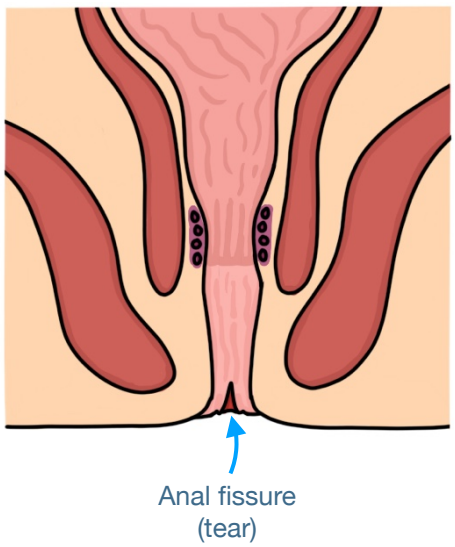
Management
- Conservative: High-fibre diet, fluids, laxatives, avoid straining.
- Topical:
  - Anusol (astringent).
  - Anusol HC (hydrocortisone, short-term).
  - Germoloids (lidocaine).
  - Spheriproct (prednisolone, cinchocaine).

Referral
- Grade III/IV, persistent bleeding.
- Non-Surgical: Rubber band ligation, sclerotherapy, infrared coagulation, diathermy.
- Surgical: Haemorrhoidal artery ligation, haemorrhoidectomy, stapled haemorrhoidectomy.

Complications: Thrombosis (painful, purplish, swollen lump), anaemia.

Anal Fissure

Symptoms
- Sharp/burning pain on defecation.
- Bright red bleeding.

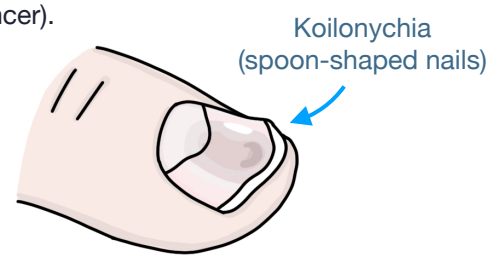


Examination
- Visible cut.
- Sentinel skin tag.
- PR not possible.

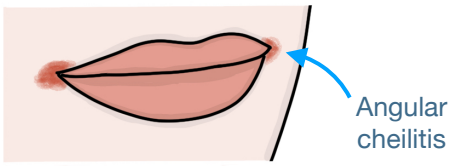
Management
- Dietary fibre, laxatives, fluids.
- Anaesthetic (short course): Lidocaine 5% ointment.
- GTN 0.4% ointment (6-8 weeks), causes headache in 25%.
- Chronic (>6 weeks): Specialist advice/referral, topical diltiazem 2%.

Iron Deficiency Anaemia

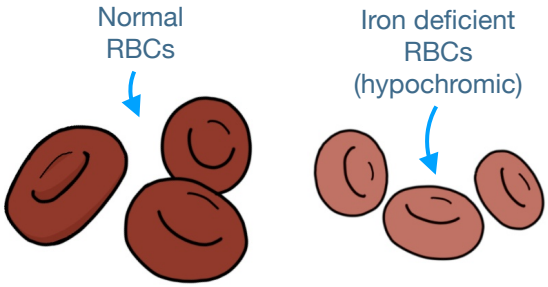
Causes
- Insufficient dietary iron intake (e.g., restrictive diets, children).
- Reduced absorption (e.g., coeliac disease, gastrectomy or H. pylori).
- Increased demand (e.g., pregnancy).
- Blood loss (e.g., donation, peptic ulcer, angiodysplasia or bowel cancer).



Features of Iron Deficiency
- Pica (odd cravings e.g., soil).
- Brittle hair/nails.
- Koilonychia.
- Angular cheilitis.
- Atrophic glossitis.



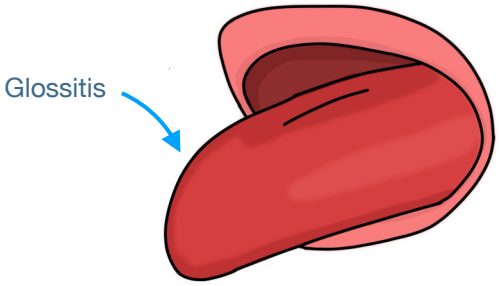
Results
- Low haemoglobin.
- Low MCV. Low MCHC.
- Ferritin:
  - Low → iron deficiency.
  - Normal/raised does not rule out iron deficiency:
    - Inflammation (e.g., infection, cancer).
    - Liver disease.
- Iron studies (if ferritin not low and still suspected):
  - Low serum iron (but not very useful alone).
  - Raised total iron-binding capacity (indicating transferrin level).
  - Low transferrin saturation.



Management of Iron Deficiency
- Treat cause (e.g., menorrhagia).
- FIT test to exclude bowel cancer.
- Refer to gastroenterology (unless obvious non-GI bleeding).
- H. pylori test after excluding other causes (e.g., GI cancer).
- Oral iron once daily (e.g., ferrous sulfate or ferrous sulfate):
  - Take on an empty stomach. At least 1 hour before eating. Avoid milk (inhibits absorption).
  - Taking with vitamin C (e.g., orange juice) may improve absorption.
  - Recheck FBC within 4 weeks.
    - Hb should rise by 20 g/L in 3-4 weeks.
  - Adverse effects: Constipation and dark stools.
- Iron infusion if required.
- Severe (e.g., hb <70 g/L) may need transfusion.

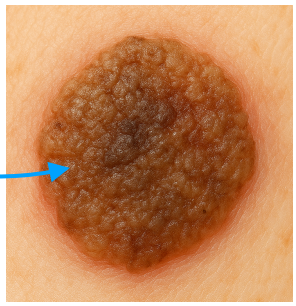
B12 Deficiency

Features
- Neurological symptoms:
  - Peripheral neuropathy.
  - Loss of vibration or proprioception.
  - Visual changes.
- Glossitis (inflamed, smooth, red tongue).
- Mood changes and cognitive difficulties (e.g., memory impairment).



Benign Skin Lesions

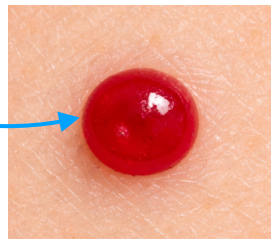
Benign Naevus (Mole): Symmetrical. Uniform. No/minimal change over time.



Seborrhoeic Keratosis
- Common benign skin lesions (not skin cancer).
- Typically flat top, clear border, “stuck-on” appearance.

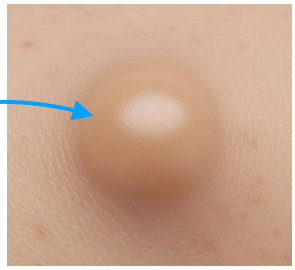
Lentigo: Flat, pigmented macules. Sun-exposed areas. No treatment needed.

Cherry Angioma / Campbell de Morgan Spots
- Small smooth soft dark red/blue dome.
- Overgrowth of capillaries.
- Common over 30.



Dermatofibroma
- Firm fibrous nodule. 5-15mm. May have paler centre. Often on legs.
- No treatment required. Excision if bothersome.

Warts
- Caused by HPV. Often hands or feet (veruccas). Resolve spontaneously.
- Treatment options: Salicylic acid, cryotherapy.



Melasma
- Hyperpigmentation, often on face and sun-exposed areas.
- Associated with oestrogen (more in women, pregnancy, COCP).

Alopecia (Hair Loss)

Types
- Androgenetic: Dihydrotestosterone (DHT)-related. Male-pattern baldness.
- Alopecia areata: Patchy hair loss, autoimmune.
- Telogen effluvium: Diffuse thinning (stress, pregnancy, iron deficiency, hypothyroidism, beta blockers).
- Traction: Hair pulling (tight hairstyles).

Management
- Androgenetic: Minoxidil (topical), finasteride.
- Alopecia areata: Topical steroids, intralesional steroids, immunotherapy.
- Telogen effluvium: Address trigger (e.g., iron deficiency, hypothyroidism).
- Traction: Avoid tight hairstyles.

Signs of Systemic Disease

Gottron’s Papules (dermatomyositis): Red/purple scaly patches on knuckles, elbows, knees.

Kaposi’s sarcoma (end-stage HIV): Reddish-purple, start as macules/papules, become nodules/plaques.

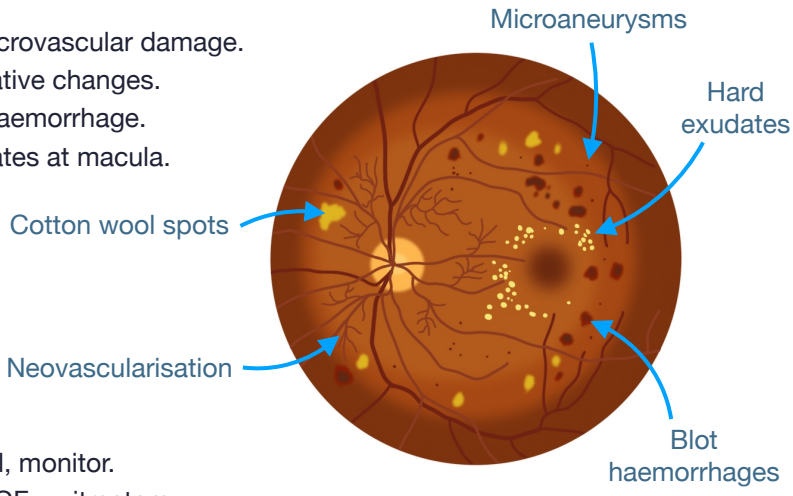
Dermatitis Herpetiformis (coeliac): Itchy, blistering rash on elbows, knees, buttocks.

Erythema Nodosum (IBD, sarcoidosis): Tender, red nodules on shins.

Malar Rash (SLE): Butterfly-shaped red rash across cheeks/nose, worsens with sunlight.

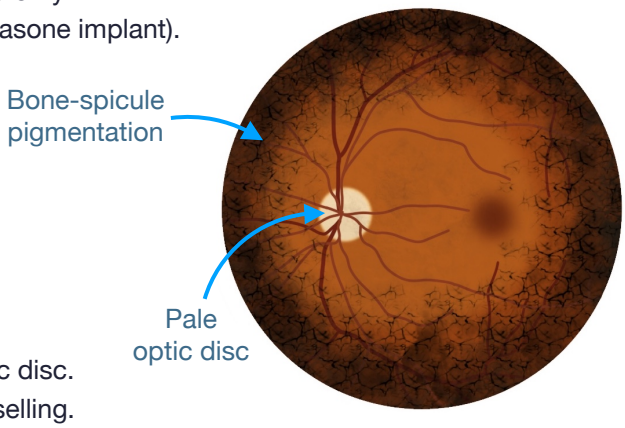
Diabetic Retinopathy

- Cause: Chronic hyperglycaemia → retinal microvascular damage.
- Non-proliferative: Background + pre-proliferative changes.
- Proliferative: Neovascularisation ± vitreous haemorrhage.
- Maculopathy: Macular oedema and/or exudates at macula.
- Complications:
  - Vision loss.
  - Vitreous haemorrhage.
  - Retinal detachment.
  - Neovascular glaucoma.
  - Cataract.
- Management:
  - Non-proliferative: Optimise diabetic control, monitor.
  - Proliferative: PRP laser, intravitreal anti-VEGF ± vitrectomy.
  - Macular oedema: Intravitreal steroids (e.g. dexamethasone implant).



Retinitis Pigmentosa

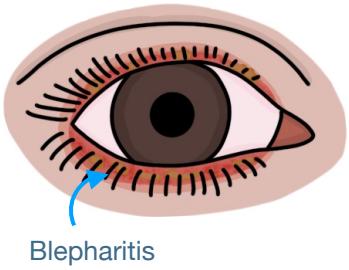
- Inherited condition (various inheritance patterns).
- Progressive degeneration of photoreceptors.
- Presents with progressive:
  - Night blindness (rods affected first).
  - Peripheral vision loss (tunnel vision).
- Late: Central vision loss.
- Fundoscopy: Bone-spicule pigmentation and pale optic disc.
- No treatment. Ophthalmology follow up. Genetic counselling.



Eyelid Disorders

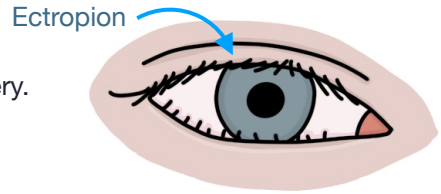
Blepharitis

- Presentation: Itchy, red eyelids; crusty lashes; gritty sensation.
- Management: Eyelid hygiene, warm compresses, lubricating drops.



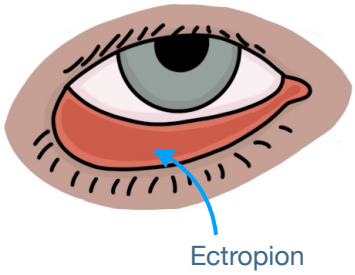
Entropion

- In-turned eyelid, corneal irritation.
- Management: Ophthalmology referral, surgery.



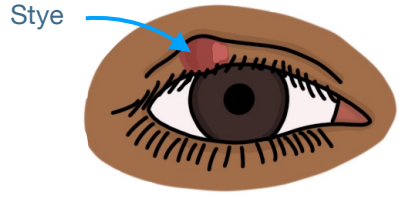
Ectropion

- Out-turned eyelid, watery eye.
- Management: Ophthalmology referral, surgery.



Hordeolum (Stye)

- Painful eyelid lump, acute.
- Management: Warm compresses, self-limiting.



Chalazion

- Painless eyelid lump, chronic.
- Management: Warm compresses, gentle massage, incision and drainage if persistent.

Periorbital cellulitis: Red, swollen, painful. Admit for IV antibiotics. CT scan if orbital cellulitis suspected.

Orbital cellulitis: Red, swollen, painful eye movements, vision changes, pupil reaction, proptosis. Admit.

Drops: Hypromellose (least viscous - 10 mins), polyvinyl alcohol (middle), carbomer (most viscous - 30-60 min).