

KNOWLEDGE ATOMS

Triage WHAT? THINK... > DO!

Instant, condensed **visual algorithm** cards for wards, in the field or revision. Simple yet advanced. v1 10/22

This is NOT a 'textbook' or a substitute for proper study and hands-on training. Master through life-long practise.

GLARE - cataract 7
This means: GOTO card 7 for more detail

QR website for photos + videos

OLD long-standing, NEW recently presenting, VITAMINS ABCDEK
ABx antibiotic, FOV field of view

WHO social inflam wounds viruses bacteria

Emergency care or urgent referral to specialist

1 RED EYE

IRITIS photophobia, pupil ↓, limbitis, PS/AS, KP
Dry eye Epikeratitis
gritty > lubricant hygiene

Sub C Haem sector/total > BP, ~2wk
Lid-Lash/FB
Lid-4

ACUTE GLAUCOMA pain+++ fast, VA ↓, IOP↑↑, oval pupil, hazy cornea > **Urgent 11**

SCLERITIS dull pain++ deep vessels > steroids arthritis/inflam

KERATITIS pain+++, VA ↓ > stain+identify cornea 6

CONJUNCTIVITIS (2 eyes) > evert 4 follicles/papillae OLD Itchy, Allergic > hygiene, ABx/allergy drops

OLD/NEW yellow, gritty 10
Bacterial > clean, self-limits/ABx

NEW clear, watery Viral
> clean, self-limits, hygiene

12 NEUROLOGY

> VA, de-sat, FIELDS, pupils, optic nerve

DRUSEN swollen? > fields
HYPOLASIA hormones

CHIASM (pituitary)
Q/HH - stroke
inflam, trauma, nutrition, toxic, compression

GLAUCOMA 'arcuate'

NYSTAGMUS slow/fast jerk
congenital VA ↓, albinism/family
acquired trauma, stroke
> null point, Rx, LVAS
> Observe R<>L
Direct hippus
Consensual
Swing RAPD
Near 3-4 sec

PUPILS cataracts
Black, React Equal, Round
trauma miotic
Horner CAD, stroke, lung > physical
Adie sluggish viral > Rx 5
phys 15% path 3rd

13 SQUINT

CNP Sudden: vert diplopia+ptosis
aneurysm, tumour, trauma

Subtle: angled diplopia+head tilt
'congenital', trauma

Sudden: horiz diplopia+head turn
SOL/IIH - ICP, T arteritis, ear

check family
> VA, light, cover/alt-cover, gaze
> cyclo 5
glasses, penalise 8yr (atropine/patch) surgery

2 VISION CHANGES

Common presentations
BLURRY VISION - Rx 5, cataract 7
GLARE - cataract 7, halo 11
FLOATERS - few, sudden, many/big 9
PHOTOPHOBIA - iritis, keratitis 1+6
DIPLOPIA - mono/binoc > pinhole, squint 13
DISTORTION - Rx 5, central field - mac swell
FLEETING - amaurosis fugax > physical - TIA
NIGHT BLIND - retinitis pigmentosa/vitamin A
'side' vision, slow pigmentation, glare
PERIPHERAL - glaucoma 11, RD 9, migraine
CENTRAL FIELD - TIA, op nerve, AMD

Loss of Vision
VA 'starting point'
GRADUAL (months)
DISTANCE > DV Rx 5
cataract 7, cornea 6
NEAR > NV add 5

SUDDEN (days)
red eye 1, trauma 3, cornea 6
vitreous+discs 8, neurology 12

Headache
1) diffuse+variable - Rx, anxiety
2) severe+sudden+1side - H2O, sinusitis, op neuritis, ACG, GCA, aneurysm-bleed
3) amj pmj+nausea - SOL/IIH - ICP

3 TRAUMA

Systematically Examine
When? How? blunt or sharp

VA 'starting point'
A Globe rupture 1, 2, 3, 4, 5
B Endophthalmitis
C Perforation > NO steroids
D Retinal detachment
E RAPD

Lids - laceration > suture+tetanus
bruising > cold compress

Anterior Chamber - flat
Fluid level - red hyphema/yellow hypopyon
Iris - dehiscence, prolapse; Sclera - skull, choroidal
Pupil - peaked, RAPD+proptosis=ON compress
Lens - subluxated, cataract > Seidel

Posterior Segment
Vitreous - PR-haem, vit haem
Retina - pale=commotio, raised=RD 9
choroidal haem

14 TROPICAL

TRACHOMA
FOLLICLES 5+ 0.5mm
> ABx drops soon, check family
INTENSE red/rough, BV hidden
> huge vitamin A NOW
CORNEA dull, rough
ULCER both, mid/low
> ABx drops NOW+often

XEROPHTHALMIA - Dull underfed/measles/diarrhoea

NIGHT BLIND clumsy in dark > Vitamin A
DRY/BITOT pigment/plaque
> drops+systemic NOW
SCARS white bands, pannus/pits
> teach hygiene+lubricants
TRICHIASIS cornea rub/lash loss > surgery

ONCHOCERCIASIS
Loiasis, Thelazia, Toxocara
DIFFUSE small corneal dots
> drops (Ivermectin) soon
SCARS lower limbal, worms
> drops+systemic NOW
OPACITY pupil blur, VA ↓
> watch+advise

Eye-Child-Kitchen-Community
coloured fruit+veg

15 ANATOMY

> Get CLOSE
DIM lighting
Px looks AHEAD
DILATE

arm's-length - reflex
hands-span +4 - details

MACULA
red, rash, flame, dot/blot
white exudate, drusen
white (tan-wool)
black pigment, scars

FOVEA holes
twist, width, AV nipping (BP)

4 EYELIDS

Malposition
Ptosis 13 age Proptosis A/NA thyroid, haem
3rd, hornor

ENTROPION
foreign body
> evert lid follicles 14
> stain, ABx

ECTROPION

Stye(lash)/Meibomian Cyst
> compress+hygiene, ABx

HERPES VZV
pain+++, nose sensation!
blisters, cornea
> antiviral

Xanthelasma > BP/lipids
Molluscum papules
> varnish/scrape
Blepharitis/MGD
itch > compress + hygiene

Lice/Mites
> jelly+antiseptic

CELLULITIS
pain+++, fever, diplopia
> Urgent

Trichiasis
cornea abra
> epilation

5 REFRACTION

Best-corrected distance Visual Acuity > individual eyes then binocularly, **catjole relaxed Px to try I, E or pictures**

Young	Average	Old	Driving	Moderate	Low Vis	Blind
6/5	6/6	6/9	6/12	6/15	6/18	6/36

RET give min 1-1.00 give max 1+3.00 *astigmatism 1.00 -0.75 -1.00 -1.25 -2.00 -2.50
DV > myopia - hypermetropia + astigmatism
BINOC > status, prisms Δ, squint 13
NV > add, helps child's reading

Glasses > ear+nose fit, tilt, bow, centration

Contact Lenses
> ensure hygiene, NO water, wearing time!
1-day/monthly - pros/cons, NO sleep
discomfort/VA issues > REMOVE! 1
avoid dust, sea > check dry cornea 6

1 ENT

IMMUNISE+PROTECT in noisy workplaces
EPI: MMR, meningitis, CMV, ototoxic drugs/chemicals
can't talk at 2m 85dB, tinnitus

- NASAL DISCHARGE child (1 side) object; Adult > suspicious
- SWOLLEN CHEEK usually teeth > Dentist
- SWOLLEN EYE ORBIT Sinusitis > Urgent
- HOARSE 1mth > suspicious
- FACIAL Palsy > check ears > steroids
- EAR PAIN (1 side)+SORE THROAT+40yr > suspicious
- OLD+POOR HEARING > do refer for aids 7

DRUGS
ABx are best
2% acetic acid
antiseptic 'boracic'

QID
presbyopia 825m
URE 125m
cataract 65m
corneal opacities 4m
diabetic retinopathy 3m
trachoma 2m

2 EAR

Swollen+Sore
Parotitis: mumps, bacterial

Firm/nodular mass
Tumour

Swollen+Pain
Mastoiditis
> ABx
Incise

LOOK+FEEL from all angles; check TMJ, tenderness, neuralgia

Sore/Itchy
> antiseptic cream

Swollen+Red
Cellulitis > oral ABx

Swollen+Pain
Pre-Auricular Sinus
> ABx
Incise

PINNA size & shape, fistulas, scars

6 CORNEA

ULCER STAIN+IDENTIFY
VIRAL dendritic-HSV-1 sensation! > tissue wisp scattered dots - adenovirus > antiviral+hygiene

BACTERIAL mid, inflam+, fast > ABx drops NOW+often (per hr)
FUNGAL feathery, inflam+ > slow, old steroid? > antifungal
VEGETABLE, ABx do NOT work

MARGINAL edge, VERNAL top mooren v PUK, allergic - nose > ABx then steroids with care

STERILISE then HEAL

NaFl + blue light

instill drops +ointment

7 LENS

> VA, Pupils, IOP, Dilate

blurry blurry+glare glare

Fundal+Corneal Reflex
know the glow
childhood: cataract 1:1000, coloboma 1:5000, retinoblastoma (RB) 1:15,000+

Normal orange-red BV+patchy yellow/white
RB IN iris notch retina/ON
Coloboma dark
Cataract dark

> Refraction 5 > IOL

3 CANAL

Wax > drops+syringe
> Gene Pearl

FB bead, sand, seed > syringe (croc/loop)

OE-Pus > mop+syringe
> ABx drops+cream

Red+Sore > ABx drops+cream

Debris/Fungal > syringe+antifungal

Healthy ears clean themselves of wax
> dim room+arm's-length compare eyes
light, shape, crescent, colour, angle
birth, 6wk, routine visits, any concerns 13

> push speculum past hairs: note wax/debris+infection
> NO water or ANY buds/sticks

4 DRUM

> hold like a pen
TILT head, pull pinna
STRAIGHTEN canal
AIM at back of eye
check 'good' ear first

dry mop till clean
cold, throat, pain, fever

AOM-Red+Sore
> ABx/steroid

CSOM-Wet Hole
> mop+ABx drops

Chronic 6wk+ painless!

Systematically check Drum+ATTIC
unresponsive > Myringotomy

'Angry' mass+small Cholesteatoma
> wait, clears 3mth

OME-Dull/Sucked (Glue)
> test hearing, future

retraction - 'sucked' holes - old injury scars - 'chalk' patch white pits - disease blood - trauma inflam - bulge mobile

8 FUNDUS 1

The 5 Discs

SWOLLEN New Vessels
diabetes - fast

Normal

DDLS ISNT

Diabetic Retinopathy
heart, brain, kidneys, nerves, feet, eyes
> SCREEN: BIO or DO

RETINOPATHY MA, D/B, CWS, VB
Proliferative (Watch) > tip, lipids
FOVEOPATHY Fovea HE + odem = VA
NVD, vit H, PR-H, NVE

Sleep/Eat/Move/Think/Sun > aVEGF > LASER

ARTERIAL Occlusion <3/60, embolic, GCA
central+branch: wake up, "blood & thunder"
> BP, DM, ESR, lipids, USS - stroke risk

VEIN Occlusion swollen disc+mac, tort bv's
central+branch: wake up, "blood & thunder"
isc: <3/60, RAPD - NVD/E/I, vit H > PRP
non-isc: >6/60, wait

9 FUNDUS 2

Age-Related Macular Degeneration (AMD)
85% dry/slow 15% wet/FAST
central VA | wavy straight lines

TOXOplasmosis
toxocara, CMV, HSV, TB, fungi
1° inflam+, 'flu-like', vitritis
2° inflam+, fluffy white, CMO
pigment, atrophy, scars

HIV new

Retinal Detachment
migraine->BOTH~30min
Floaters! - flies/net
Flashing lights - at sides
Field loss - black 'curtain'
risks: trauma/surgery, myopia, wavy

navigation, faces, TV, text
> Rx 5 > Amsler > OCT
> 'good light'+LVAS
early+wet > aVEGF

Cook FULLY+water
> ABx+Steroids
guide the blind

5 CHILD

Congenital Profound loss
1:1000 mostly sensorineural, genetic, low birth weight, early infection, poor nutrition > counselling, immunisation, education & hygiene, SURGERY (cochlear), social help - 6mth

Hearing Development
0-8wk - sounds startle, opens eyes, blinks, looks alert, enjoys singing
6mth - turns head or eyes in direction of sound, likes being talked to
9mth - listens to loud and soft sounds, makes all sorts of babbling sounds
12mth - responds to own name, starting 'baby' words
18mth - points to familiar objects when asked, using several simple words
2yr - talks and puts words together, responds to even soft voices DEAFBLIND rubella

Speech/Lang Development
PATIENCE > get close/good light look straight ahead remove distractions repeat words over encourage lip reading don't cover face or eat 'overprotect'

WITHDRAWN/'STUPID'
> core tests 6
home signing engage teacher hearing aids teaching aids game days

6 HEARING LOSS

Clinical Tests
> quiet room, behind Px, 'good' ear first, rub opp tragus, 'cowboy, fish, 3,1,2...'
Can't hear voice at arms length: Sly child > point at objects

DEGREE
Slight - whispered 26-40dB
Moderate - conversational 41-60dB
Severe - loud 61-80dB
Profound (deaf) - shouted +81dB

Distraction (6-18mth)
high-rattle, low 'O'oo, med 'Eee'
sand bottle

TONE audiometry or Fork (BC-AC)
typanometry 512Hz 'C'
normal, flat (fluid/hole), negative

Conductive wax, glue, trauma, sclerosis

Sensorineural viral, toxic, noise, age

1-2 ears
eust tube, vestib Swan

Fast OeM, viral

Fluctuate OME, meniere's
tinnitus, vertigo, birth, family, drugs, job/noise

10 CHILD

Congenital Cataract
both eyes: stops vision growth > reflex 7 > IOLs, glasses/CLs

Retinopathy of Prematurity (ROP)
12kg/4.4lb or 6wk early
RD risk, blindness
> by 4wk needs expert BIO+laser/aVEGF

Congenital Glaucoma
big eye(s), photophobic, watery, hazy cornea > IOP > Surgery

Water eye RED Eyes
white eye > massage duct
Baby swollen+discharge
3mth+ itchy/watery

DULL Eyes
ANY unusual colour, shape, size, angle
Xero 14, measles, diarrhoea > vitamin A+good food

11 GLAUCOMA

OPEN Angle
slow periph field
1° or 2° uveitis, neovasc, pigment, steroid, exfoliation
> Discs R<L, IOP, VA, Fields, Pupils 12
> Drops ongoing LASER, Surgery

CLOSED Angle pain+++ VA/halos, nausea
risks: age, race, cataract, hyperopic mid-dilated unreactive pupil, red, iris bow, hazy cornea, IOP↑↑+40+

Diamox/Pilocarpine/Steroids
massage > LASER, IOL

7 HEARING AIDS

PREVENTION v CURE

Many types and costs; all selectively amplify frequency/shape/degree of loss

Even simple devices can be effective in the right setting, with BIG school and learning impact

Success
motivation: family, user, school - realistic usage - it's no 'cure' robust+affordable attractive (stigma) fitted+maintained start at early age can look after

Disabling loss
child 30dB 14yr+ 40dB

DALYs mass aids > few complex ops
17% aid use children 34m

BTE aid
ANR phones/'free field' speaker
1+3kHz; warble 0.25, 0.5, 1, 2, 4, 8
conduction (glue, hole) 30dB gain
presbycusis 60dB gain

dir mic feedback WDRC noise! speech!

SHAPE flat sloping ski slope left hand

8 ANATOMY

ATTIC pars flaccida white pits

INCUS old scar

UMBO

light cone

TM & periphery intact and smooth