

How to examine *the eye* without a slit lamp

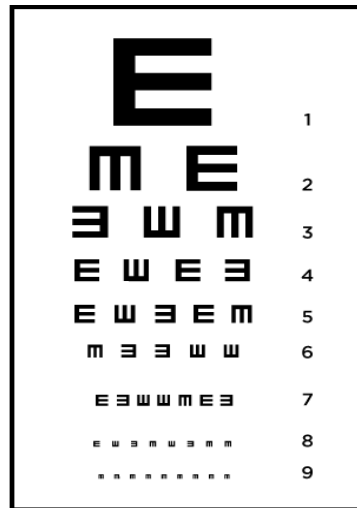
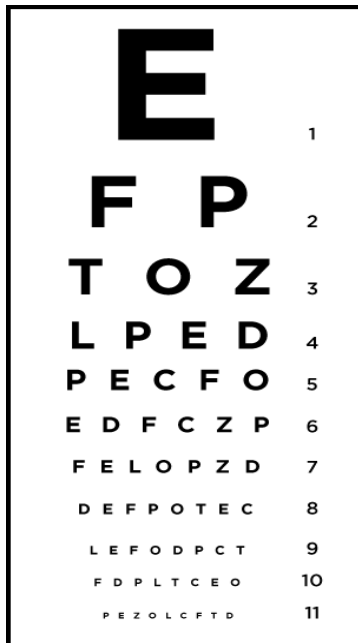
From the NHS Vale of York CCG GP CPD Event on 4 December 2018, Presented by Mary Fordham, Nurse Practitioner

- A comprehensive history is important in evaluating any eye problem and should include a history of the presenting problem, including concurrent systemic symptoms, ophthalmic history and relevant medical history.
- The patient's medical history may be less relevant if they are complaining of a traumatic, rather than a non-traumatic problem.
- A diagnosis assumed from the history without undertaking an examination, may result in problems being missed (Marsden 2013).

- Eye examination should be systematic, and requires minimal equipment. There is another eye to compare with to enable you to establish what is normal and what is abnormal. In addition, because the eyes are generally completely visible examination is easy. Patients are often able to provide input as to what is usual/unusual for them. Using a systematic process for examination ensures no abnormalities are missed.
(Marsden 1998, 2013)
- Start with a brief questioning of the patient as to what the problem is i.e. loss of vision, painful eye, blurred vision etc.
- Then go on to record the patients visual acuity.

- The first part of every eye exam should be an assessment of visual acuity – a test of central visual function . (This can be done with either a standard Snellen hanging wall chart read with the patient standing at a distance of 6 metres, a reduced 3 metre chart or a specially designed pocket card (held at 14 inches). (£2.18 from Medisave)
- Test one eye at a time with distance/TV/driving glasses or with contact lenses if worn.
- Both eyes should always be tested.

First do a visual acuity with distance glasses or contact lens.





- Visual acuity is recorded as chart distance (*numerator*) over the number of the lowest line read(*denominator*)ie 6/6, 6/12.
- If patient unable to reach 3/18 (6/9 on a 6m chart) then use a pin hole (a small hole punched with tip of a pen through a piece of paper and then held up to the eye for patient to look through). A pinhole visual acuity test should be used to make sure that the reduced visual acuity is not due to a refractive error.
- If the pinhole improves vision, the problem is likely to be anterior to the macula (for example, cataract or vitreous haemorrhage), but if vision is worse there is a macular problem (for example, AMD).
- Optimal visual acuity measurements that are different in the two eyes or are reduced compared to age-matched normal values indicate some ocular abnormality and must be explained i.e. amblyopia.



- If patient complains of pain ascertain the type, location and severity of, constant or intermittent; is the eye more light sensitive than normal (photophobia) or watering more than normal (lacrimation)?
- At the eye department it gives us a starting point from which to begin our triage along with other associated patient symptoms; as well as being one of medico-legal importance.

Your eye examination can be done with
just a pen torch



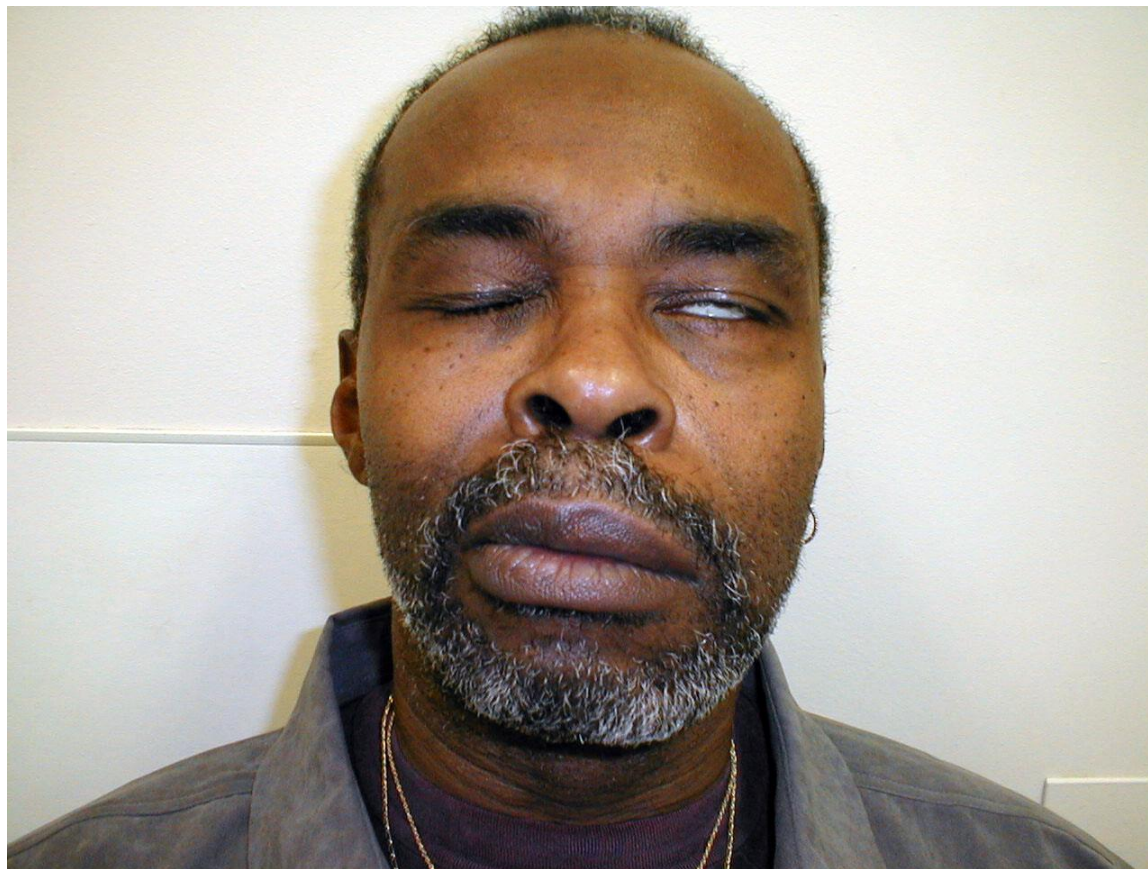
Conjunctiva:
Clear Layer
Covering White
Sclera
Underneath

Pupil

Iris

- Look at the eyes in the context of the patient's face. Are they symmetrical? Are they in the 'normal' position for the patient?
- Examine the eye from the 'outside' inwards. It is useful to compare one eye with the other, never examine only one eye.
- Topical anaesthetic drops may be required to alleviate pain before examination. Remove contact lenses, if present, and retain the lenses in case they are required for microscopy, culture and sensitivity testing because of corneal infection.

- **Eyelids:** Inspect their position i.e. is the lower lid turning inwards (entropion) or outwards (ectropion)? Inspect the integrity of the eyelid margins; are they smooth and approximated to the globe or are there any lacerations?
- Examine whether there are any lumps or structures that are not part of the normal anatomy of the eyelid. Ask the patient to close their eyes and open them again. Is closure symmetrical? Is any of the eye still visible when the eye closes?



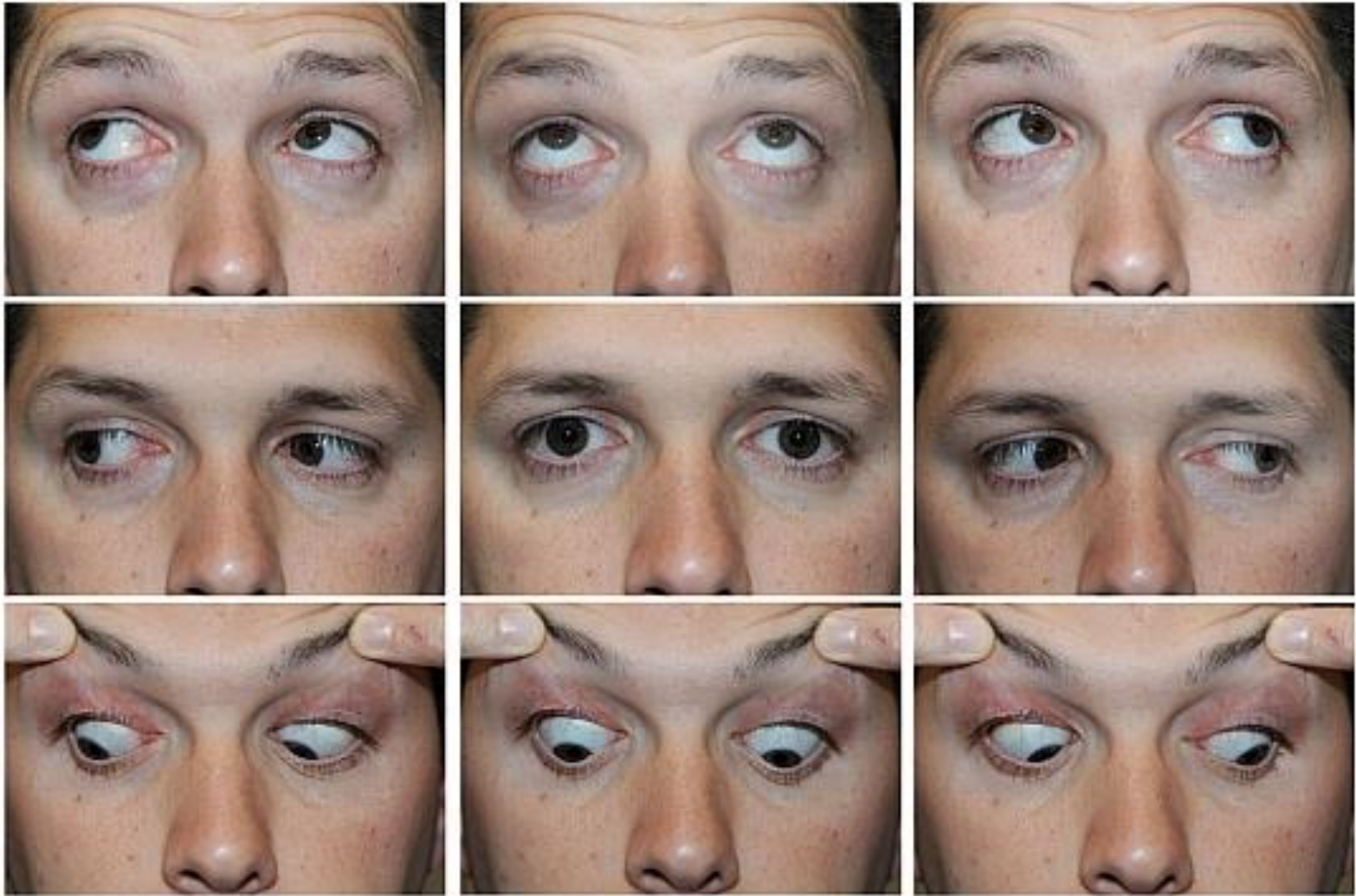
Patient unable to completely close left upper eyelid due to peripheral CN 7 dysfunction.

- **Conjunctiva:** What colour is it? A 'red eye' or a 'white eye'? Look for patterns of conjunctival redness (conjunctivitis, uveitis, scleritis, episcleritis) Is the conjunctiva smooth or bumpy? Does this occur in one place, or everywhere? Is there any discharge? If so, what colour and type is the discharge?
- Inspect the conjunctiva for the presence of any foreign bodies. Often, these may be wiped off the conjunctiva with a wet cotton bud, after the instillation of a drop of topical anaesthetic. (The bud can be wetted with the residual anaesthetic drop from the minim.) Wipe in the direction away from the cornea.



Corneal foreign body

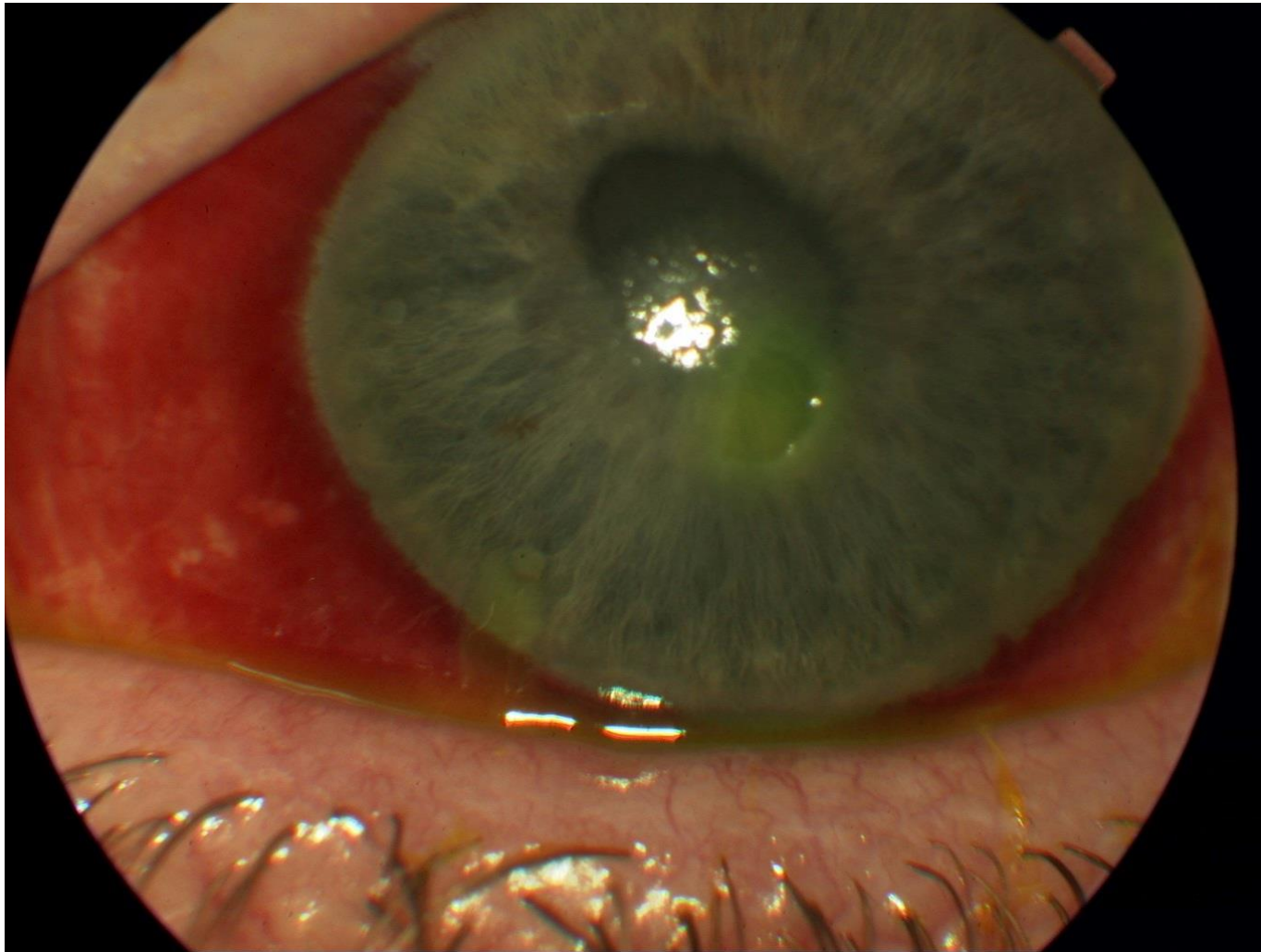
- Taking into account previous observations evert the eyelid by asking the patient to gaze down, pull eye lid down and out, place cotton bud in the first lid crease and press firmly with the cotton bud.
- **Sclera:** The normal sclera is white and is continuous with the stroma layer of the cornea. Along with the intraocular pressure (IOP) of the eye, it maintains the shape of the eyeball. The junction between the white sclera and the clear cornea is called the limbus. Look for signs of discolouration or redness (SCH, episcleritis or scleritis). Note position of this inferior, superior, temporal, nasal.
- Check that **eye movements** match and are full.



Full range of ocular movement
(FROM)

York Teaching Hospital **NHS**
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- Examine the **cornea**. It should be smooth in all dimensions and completely clear. The iris and pupil should be visible in full detail through the cornea. Check for corneal foreign bodies and ulcers. Foreign bodies are unlikely to wipe off and attempts to do so may remove corneal epithelium. Ulcers usually look like small white areas on the cornea.
- Staining - Instil a drop of fluorescein into the eye. Examine the fluorescein-stained damaged epithelial tissue, using a cobalt blue light. Damaged areas will show up as areas stained fluorescent green. If a blue light is not available, instil a drop of saline into the eye to wash out any excess fluorescein. Any significant damage to areas of tissue will show up as areas stained yellow.



Corneal abrasion stained with fluorescein

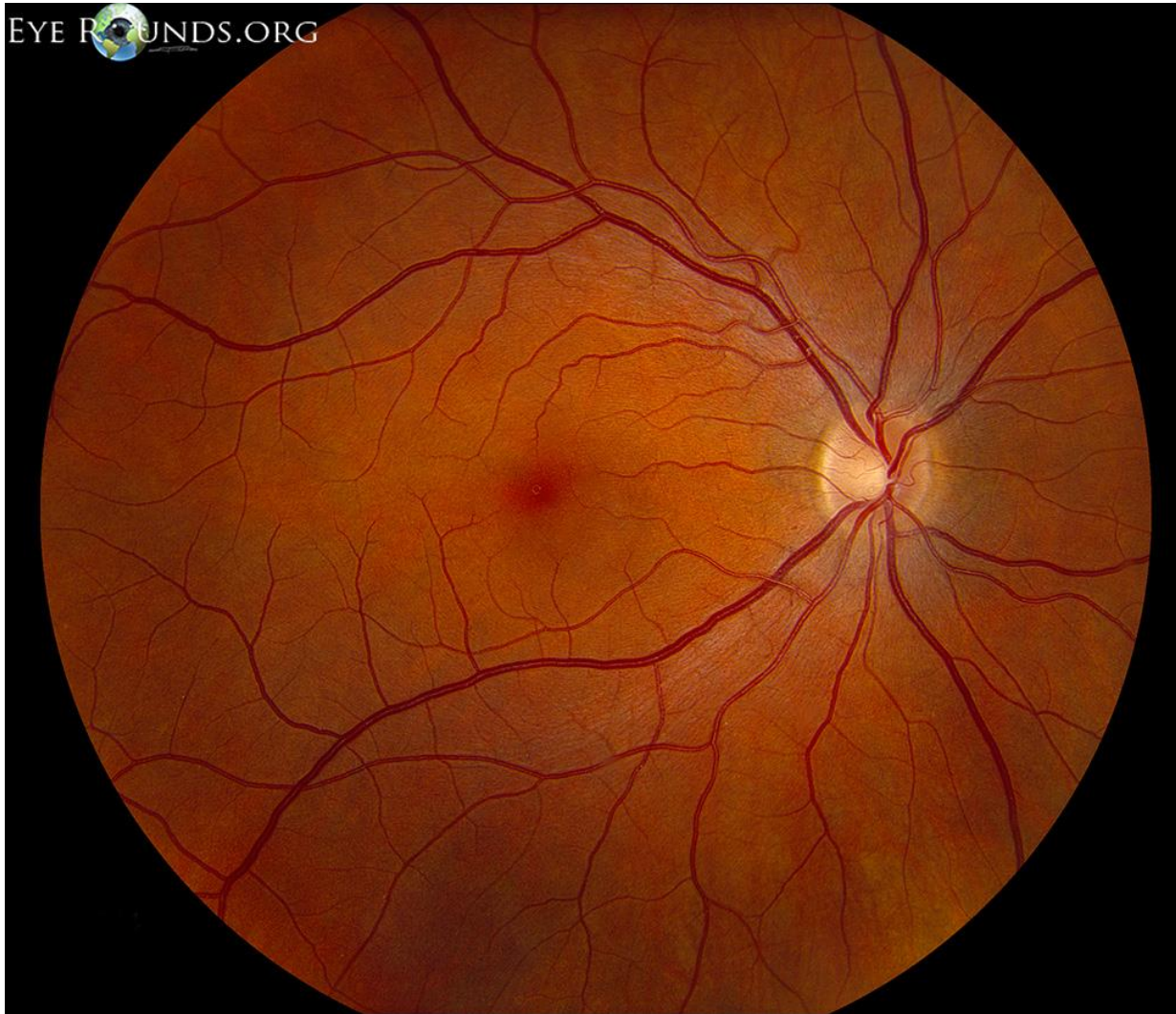
- **Pupil:** In a darkened room examine pupil constriction/dilation in response to light, and compare eyes looking for a relative afferent pupillary defect - the pupils constrict less fully when light is shone in the 'impaired' eye.
- Look for a fixed semi dilated pupil in acute angle glaucoma.
- In acute uveitis the affected pupil may be mioised or misshaped (synechie).



Acute angle closure glaucoma

Optic disc: If you have the use of an ophthalmoscope. The beam should be the same size as the pupil. Initially, stand back and inspect the red reflex. Then at a parallel height to the subject's head, approach at 45deg to the direction of gaze until almost touching the patient's brow, use a hand on the brow to stabilise (assessing for glaucoma cupping, disc swelling and atrophy).

Focus by adjusting the lens wheel once retinal features are in view.



Normal optic disc

- **Loss of vision:** Distinguishing between the many causes of loss of sight depends upon history, examination and investigation.
- Sudden or gradual. Sudden loss indicates a vascular or inflammatory cause.
- While vascular causes tend to be asymptomatic, inflammation is accompanied by redness and pain if at the front of the eye, but shows fewer inflammatory features the more posterior the problem.
- Only with visual loss and pain (with or without jaw claudication, scalp tenderness or loss of appetite) temporal arteritis needs to be excluded. (Pain only and no visual problem refer to AMU, they can organise a biopsy if needed).

- In general, speed of referral should reflect symptom duration. Sudden vision loss usually requires urgent referral but not if vision has been lost for more than 24 hours.
- Where arterial circulation is impaired, a few hours may be critical if sight is to be saved.
- Gradual loss of sight in an adult commonly indicates cataract. Other causes such as dry AMD, open angle glaucoma or diabetic maculopathy are often less symptomatic until advanced.

- **Diplopia:** examination needs to be focused on the history. What does the patient mean by double vision? Determine whether the diplopia is monocular or binocular by seeing if the double vision disappears when one eye is occluded (binocular diplopia is only present when both eyes are open).
- Inspect the eyelids and the pupils. Is there any obvious drooping or discrepancy in size of the pupils? Is there any obvious cranial nerve palsy? Look for proptosis. Check visual acuity, that pupils are equal and reacting to light and accommodation. Check the range of eye movements.
- If relevant, a more detailed neurological examination may be necessary. You may need to check for temporal artery tenderness. Check confrontation fields any apparent deficit requires further assessment. Referral to an ophthalmologist or optometrist for a formal visual field test (Simon et al 2009).
- A history of facial trauma should result in examination of the facial bones to exclude an orbital floor fracture.



Confrontation field test

- You don't need to do all of these tests on every eye patient as it is dependent on the patients history and symptoms.
- **But doing the visual acuity for all your patients presenting with an eye problem will be of great help .**

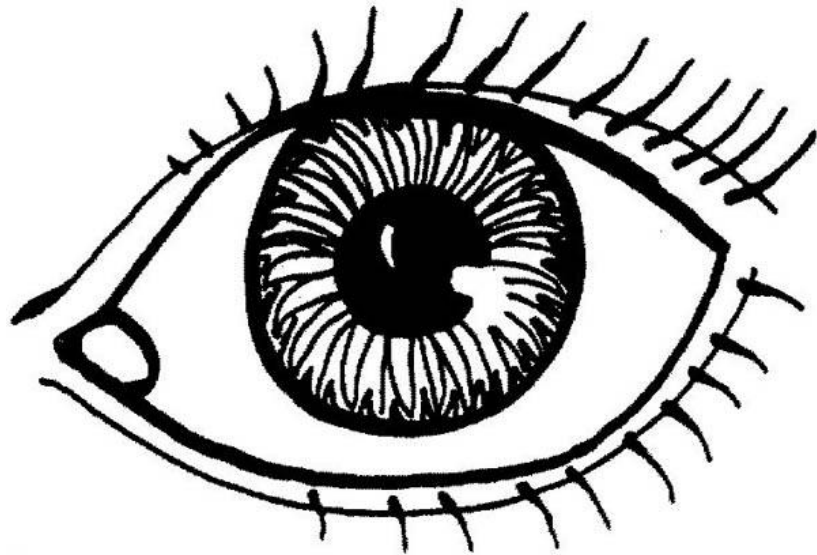
What information the Ophthalmic Triage Nurse needs

- GP's details – name and surgery, contact telephone number.
- Patient details, name address, NHS number, patient telephone/mobile numbers.
- **Visual acuity**
- What the patient is complaining of – symptoms?
- Which eye?
- When did this start?
- The Gp's findings
- What treatment the patient has received if any?
- Medication including any eye drops
- POH
- PMH
- A letter with your findings; sent with patient or faxed/emailed to clinic

- Most common eye conditions will be easy to diagnose and straight forward to manage. However, benign and sight-threatening conditions can present very similarly.
- Red flag symptoms are relatively rare but you as GPs will be looking out for them in every patient who complains of an eye symptom or has a suspected systemic condition that may have eye signs.
- If you need advise call the eye clinic to speak to one of the **Ophthalmic Triage nurses – 01904 726758**

- Any questions?

Thank you



Mary Fordham - Ophthalmic Nurse Practitioner