

## Examination of the Eye and Retina

### Visual Acuity

- Ask:
  - Do you normally wear glasses or contacts?
  - Why and when do you wear them?
  - When was the last time you had your eyes checked
- One eye at a time
- Cover eye with palm of hand (not fingers)
- Snellen chart (use glasses if normally worn) use pinhole if  $< 6/6$  (the smaller the fraction the worse the vision):
  - Clearly state where on the chart to start reading
  - Tell the patient to read above or below as appropriate
  - Record:
    - Which eye
    - Distance from the chart in metres on top, chart number on bottom
    - Add/subtract extra/missed letters as appropriate
    - Record if wearing spectacles, etc
- If they can't read the top line then:
  - Count fingers  $\frac{1}{2}$  metre distance
  - Hand movement  $\frac{1}{4}$  metre distance
  - Light projection - can they tell if a light is shone on dark wall
  - Light perception - can they tell if a light is shone in their face
- Near vision (in patients  $> 40$  yrs complaining of near vision blurring – probably presbyopia)
- Test with pinhole

### Visual Fields

- Hat pin confrontation (red or white tipped). One eye at a time while patient sits one metre in front of examiner focusing on their nose.

### Extraocular Movements

- Both eyes together. Move finger in H pattern while patient keeps head still and follows finger with their eyes. Ask patient which movement provokes the most diplopia.
- Corneal light reflex
- Cover test

### External examination

- Lids
- Conjunctiva
- Cornea using fluorescein drops
- Anterior chamber
- Pupils – PEARL (Pupils Equal And Responsive to Light)
- Lens

## **Ophthalmoscopy**

- Hypertensive retinopathy (see 50: hypertension, page 39)
- Diabetic retinopathy
  - Non-proliferative - microaneurysms, blot haemorrhages, hard exudates (+ cotton wool spots = advanced)
  - Proliferative - new vessel growth
  - Maculopathy - hard exudates around macula
- Cotton wool spot (soft exudate) = retinal infarction
- Hard exudates = protein/lipid exudate
- Flame haemorrhage = arteriole bleed into nerve layer
- Blot haemorrhage = subretinal bleed
- Dot haemorrhage = capillary bleed
- Microaneurysm = swollen capillary
- Roth's spot = central white infarct on red background due to infective emboli.

## **Slit lamp**