

Eyes



- Inspection
- Visual Acuity
- Visual Fields
- Pupillary Response
- Fundoscopic Exam



Eye Examination

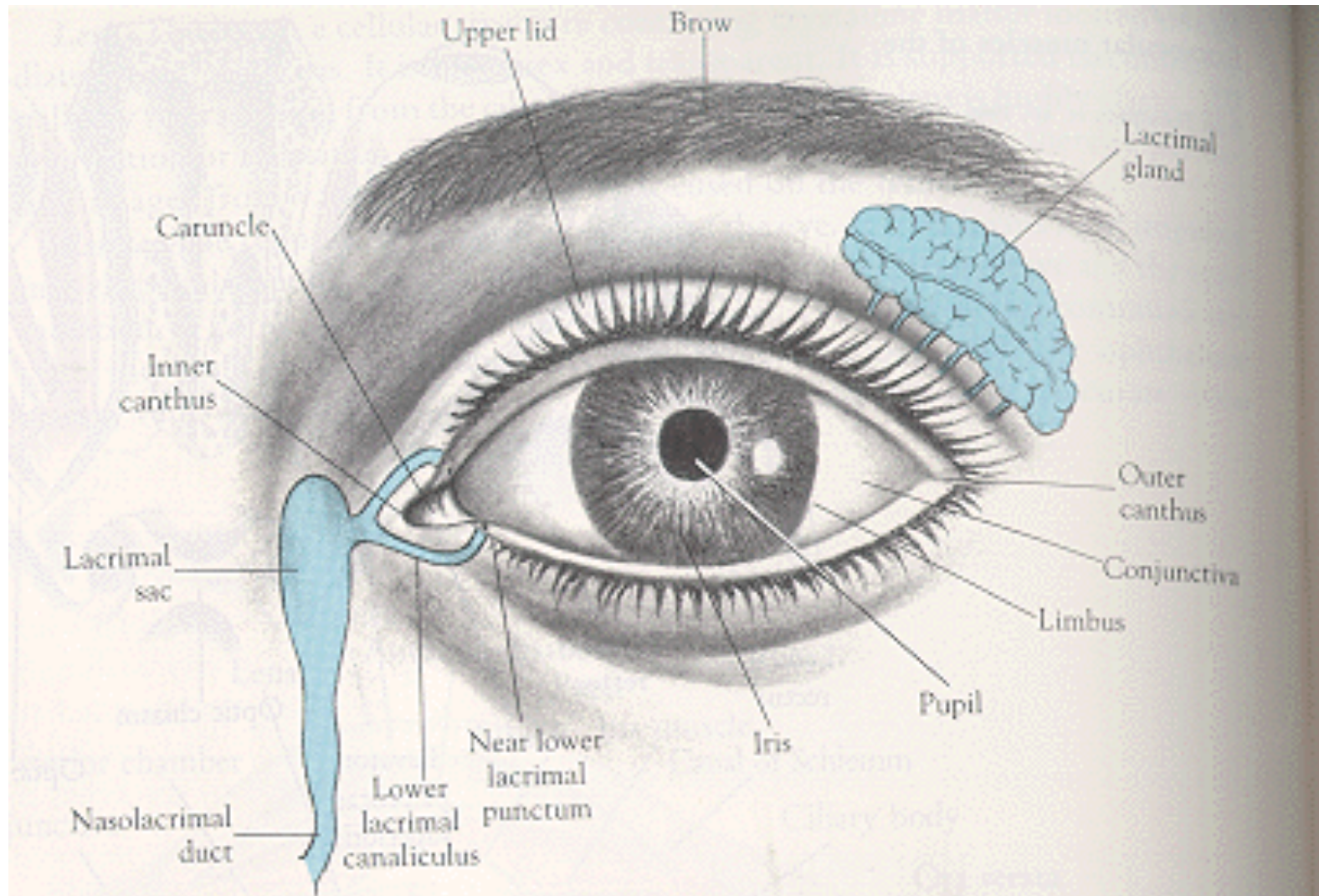
Inspection



11. Inspects external ocular (eye) structures (lids, conjunctiva, iris, cornea, pupils)

12. Gently moves eyelids up and down to obtain a better view

Important landmarks of the external eye



Inspection

A healthcare professional with dark hair tied back is shown in profile, looking at a patient's face. The patient has short brown hair and is looking upwards. The professional's hands are gently holding the patient's face to stabilize it for inspection. The background consists of white horizontal blinds.

11. Structures to Inspect

- Position and alignment of eyes
- Eyebrows
- Eyelids
- Lacrimal Apparatus

Eyes

Visual Acuity



13. Checks acuity with Snellen and from proper distance

14. Checks acuity both eyes separately

Snelling Eye Chart



Hand held eye chart

13, 14. Visual Acuity

- ◆ Hold card approx 14" from pt's nose

- ◆ Read smallest line

- ◆ Ask pt to cover one eye

- ◆ Cover other eye and repeat



Eyes

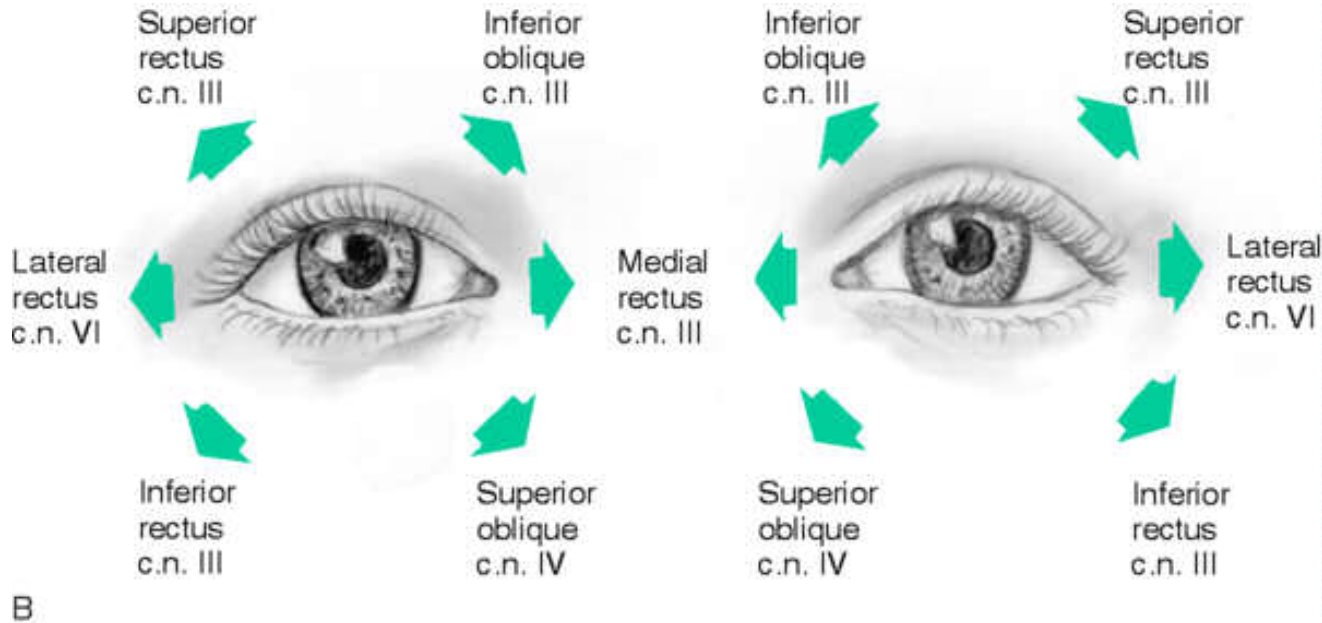
Extraocular Movements



Extraocular Movements

15. Evaluates extraocular movement (big H)
16. Checks convergence and accommodation (follows finger from far to near)

Extraocular Muscles and Direction of Movement



The extraocular movements of each are controlled by the 4 rectus and 2 oblique muscles

The extraocular movements may be tested by having the patient move the eye in the direction controlled by each muscle.

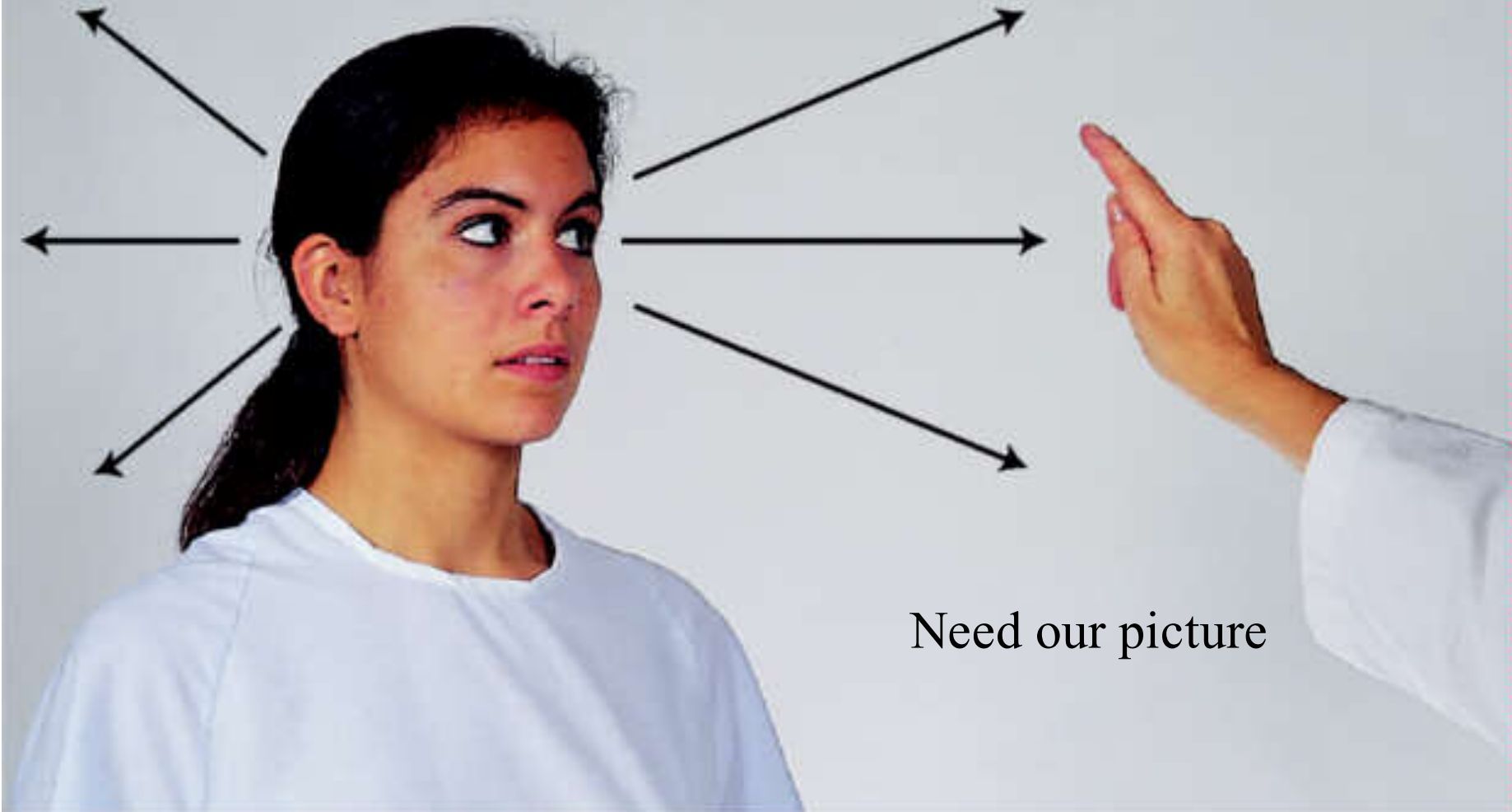
This may be accomplished by having the patient move their eyes in the six cardinal direction depicted on this diagram.



15. Extraocular Movements

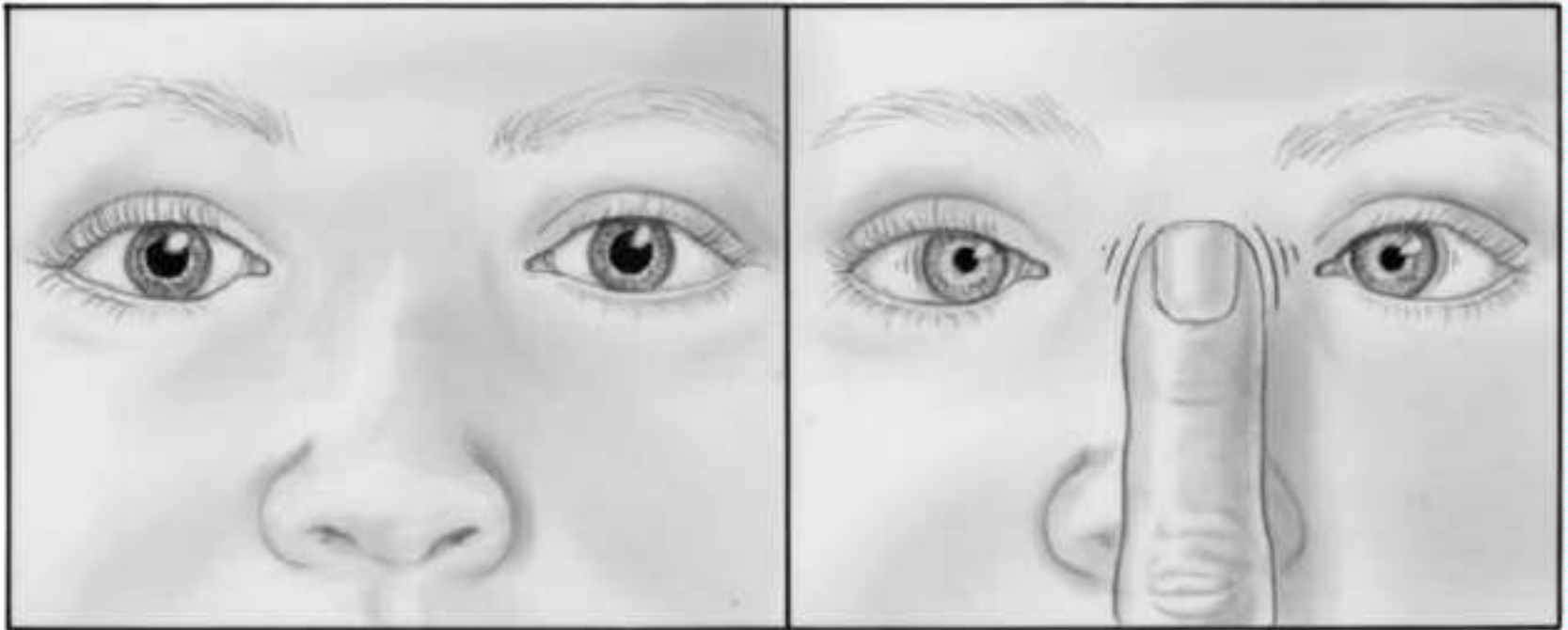
- Ask the pt to hold his/her head still and to follow your finger with their eyes

Six Cardinal Positions of Gaze



Need our picture

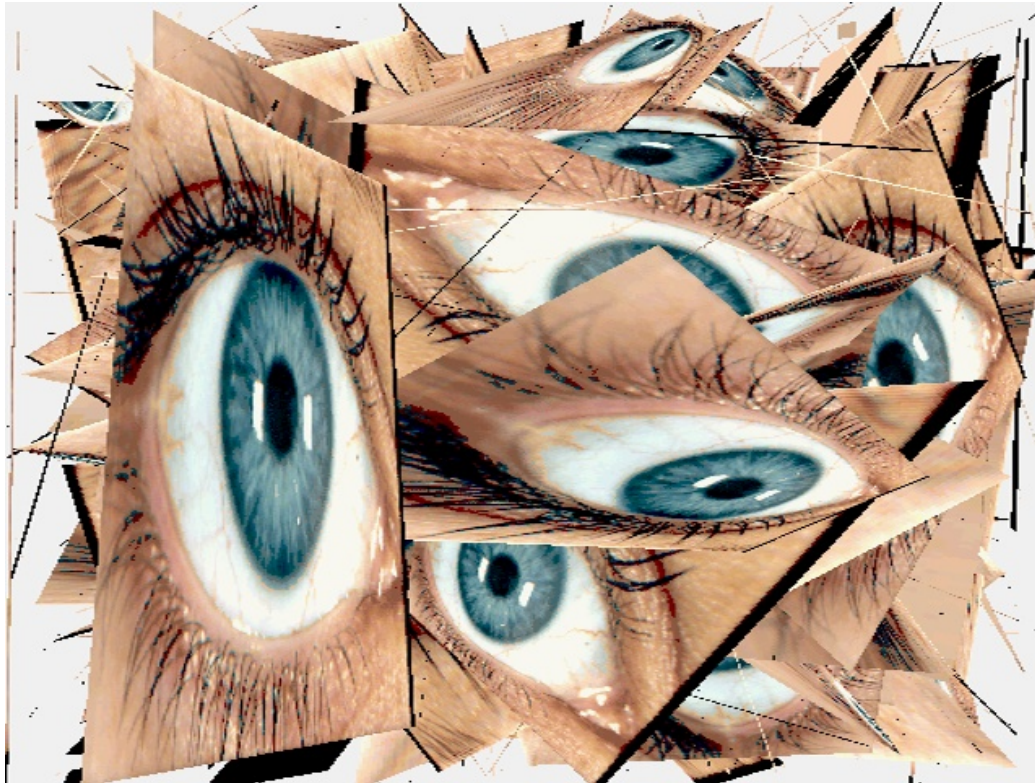
Convergence and Accommodation



Needs illustration

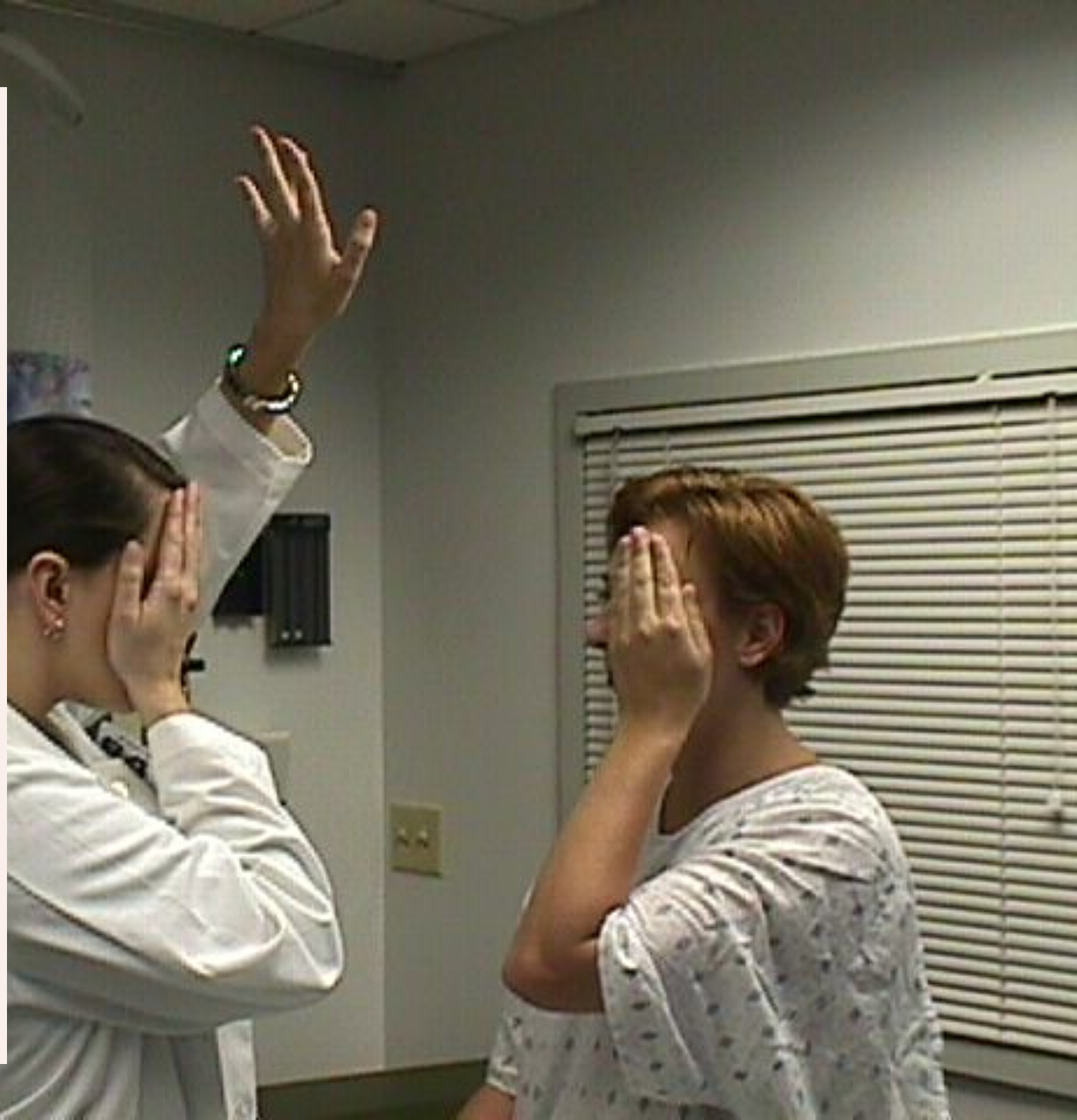
Eyes

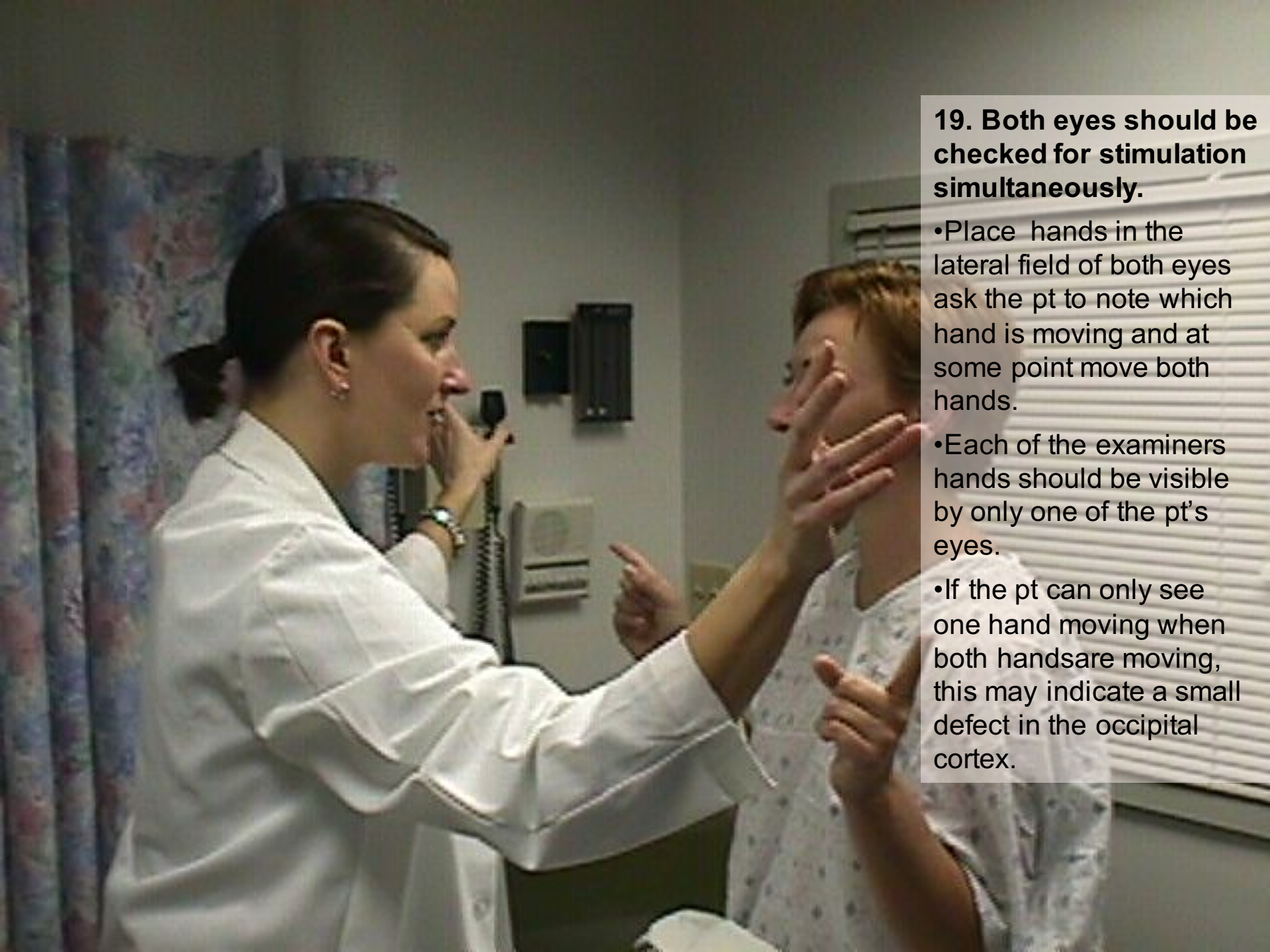
Visual Fields



17 –20: Visual Fields

- Ask the pt to cover one eye
- Cover your opposite eye
- Ask the pt to look straight ahead
- Place one hand in the plane between the patient and the examiner out of your vision
- Move the hand and ask the patient when he/she can see your hand

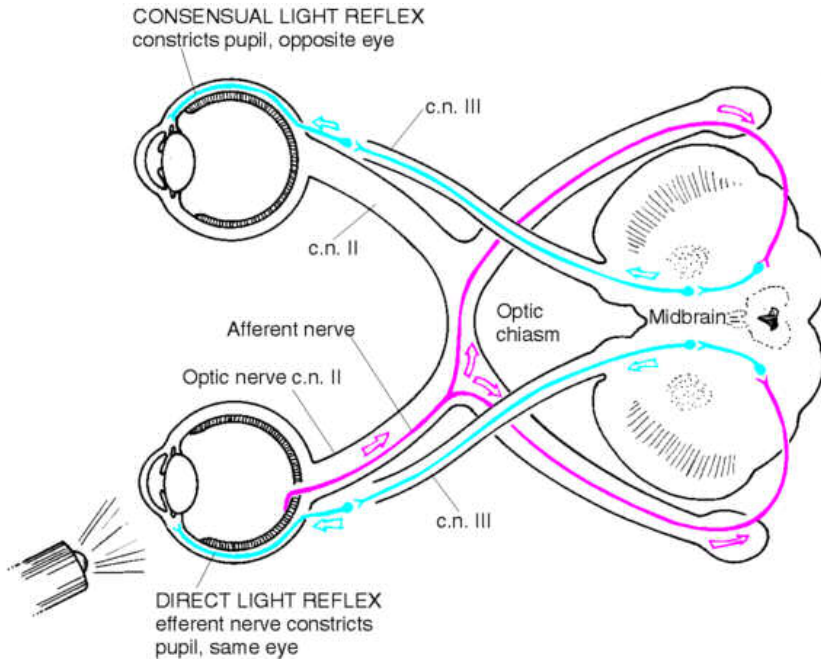




19. Both eyes should be checked for stimulation simultaneously.

- Place hands in the lateral field of both eyes ask the pt to note which hand is moving and at some point move both hands.
- Each of the examiners hands should be visible by only one of the pt's eyes.
- If the pt can only see one hand moving when both hands are moving, this may indicate a small defect in the occipital cortex.

Eyes



21. Pupillary response to light – direct (same eye the light is directed into)

22. Pupillary response – indirect (eye light is not directed into) (watch examiner's eyes closely, can watch eye dilate)

23. Swinging flashlight test (start in one eye, quickly move to other eye, wait then fast back to original eye and wait)

Pupillary Response



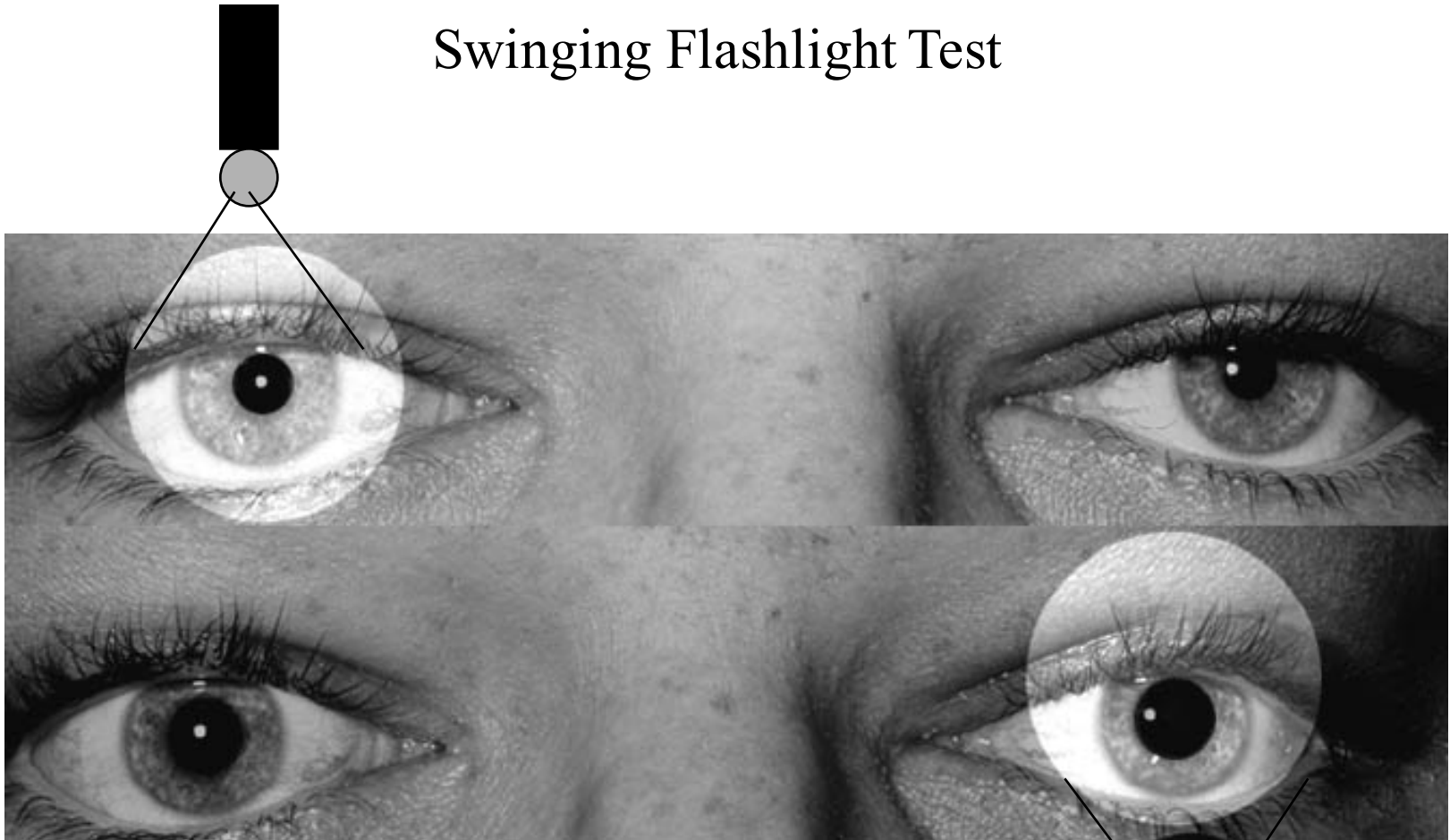
21, 22. Pupillary Light Response

Observe reflection of pen light in both pupils. Is it symmetrical?

Test the pupillary response to light

- Direct response – pupil constricts in examined eye
- Consensual (Indirect) response – pupil constricts in the opposite eye

Swinging Flashlight Test

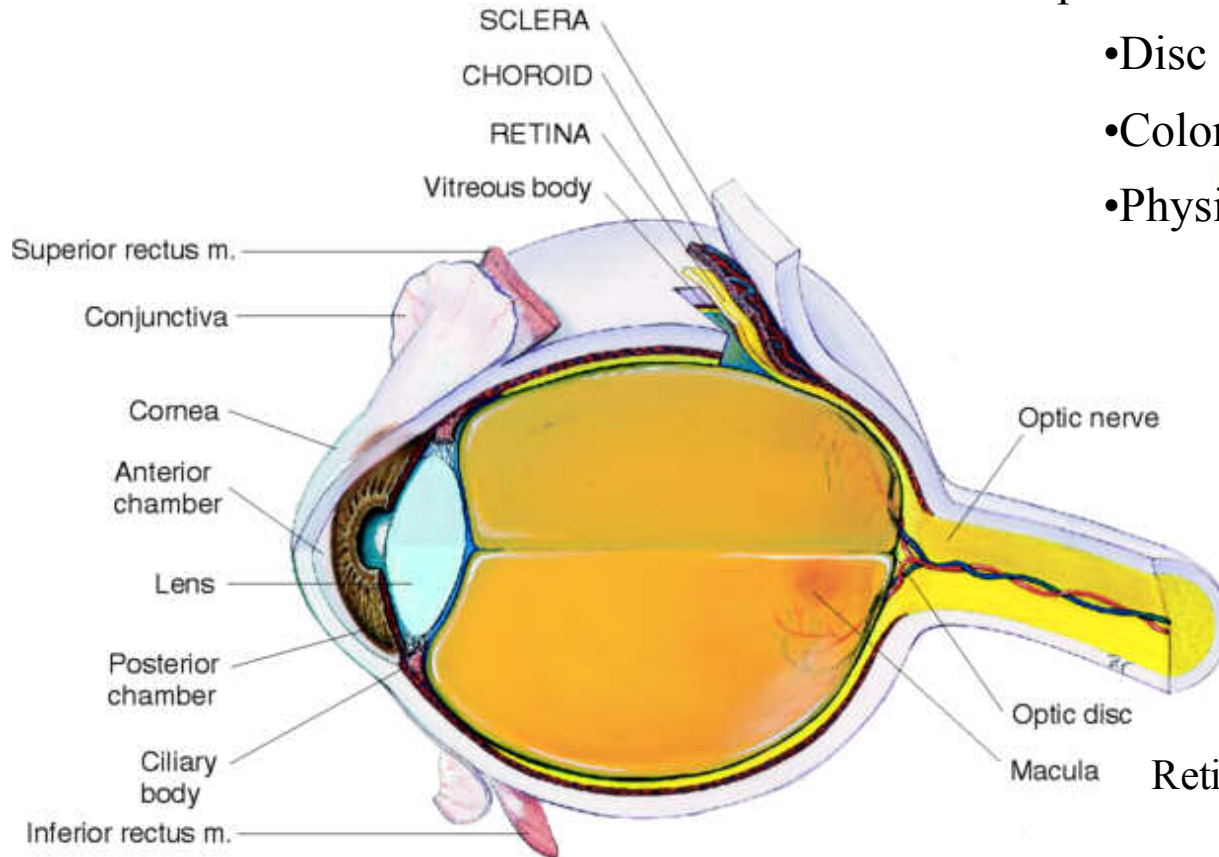


Detects optic nerve disease vs ocular disease

- A bright light is placed in front of one eye and moved quickly to the other eye, then one or two seconds later moved quickly back to the first eye.
- The pupils should remain constricted when the light is taken from one eye quickly to the other



Fundoscopic Exam of the EYE

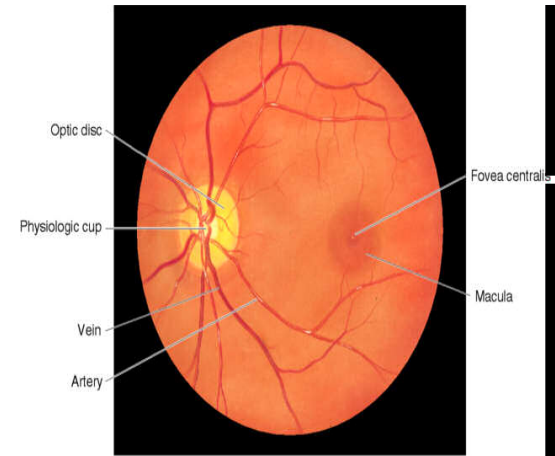


- Optic disc
 - Disc outline
 - Color
 - Physiologic cup

Retina

- Vessels
- 4 quadrants
- Fovea and macula
- Anterior structures

Eye



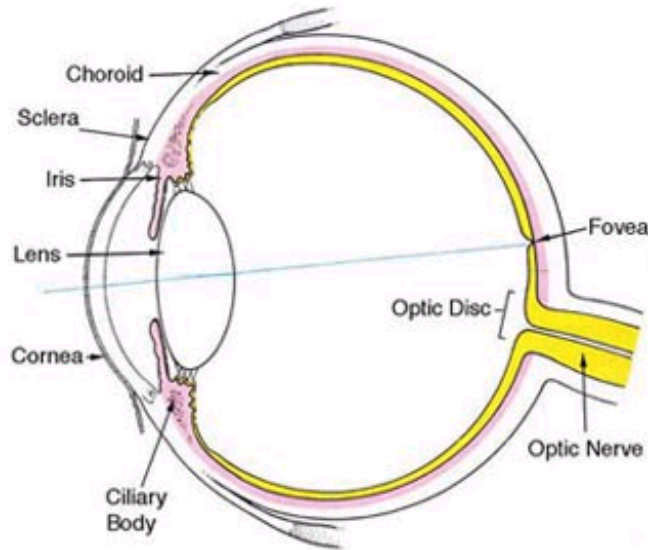
Fundoscopy Exam

24. Lights are dimmed
25. Holds and positions ophthalmoscope properly and uses index finger to switch lens
26. Examiner uses R hand R eye to look in R eye
27. Inspects anterior structure with ophthalmoscope - R eye (Start +15-40 to see anterior structures and move toward 0)
28. Inspects optic nerve - R eye (comes in at 15 with lens at 0 or moving from the positive toward 0)
29. Traces vessels to all four quadrants - R eye
30. Observes macula - R eye (Credit to be given if #28 and look laterally)
31. Examiner uses L hand L eye to look in L eye
32. Inspects anterior structure with ophthalmoscope - L eye (Start at +15-40 to see anterior structures and move toward 0)
33. Inspects optic nerve - L eye (Comes in at 15 with lens at 0 or moving from the positive towards 0)
34. Traces vessels to all four quadrants - L eye
35. Observes macula - L eye (credit to be given if #33 and look laterally)

Internal Anatomy of the Eye

During the **Fundoscopy Exam** the ophthalmoscope may be used to visualize the following structures of the eye:

- Optic disc
 - Disc outline
 - Color
 - Physiologic cup
- Retina
 - Vessels
 - 4 quadrants
 - Fovea and macula
- Anterior structures



Ophthalmoscope



Lenses (magnification power of lens = diopters)

- Controlled by diopter dial
 - Black or green numbers - positive numbers - counterclockwise – plus lenses
 - Red numbers – negative numbers – clockwise- minus lenses
- Light source
 - Brightness controlled by rheostat
- Various apertures
 - Large – usually use this one
 - Small - small pupils
 - Red free filter - green beam, optic disc pallor and minute vessels changes
 - Slit - Anterior eye, elevation of lesions
 - Grid - size of fundal lesions



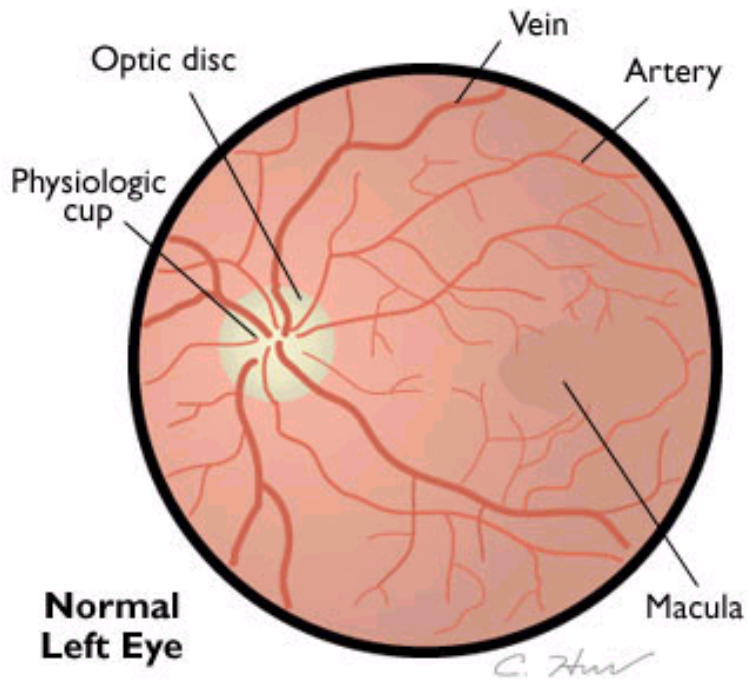
Holding the Ophthalmoscope

- Use the index finger to change lenses (diopters)

24-35. Fundoscopic Examination

- Darken the room
- Place the ophthalmoscope to 0 diopters and the large round beam
- Keep index finger on lens disc
- Use R hand for pt's R eye and L hand for pt's L eye
- Ask pt to fix gaze on a spot on the wall
- From about 15" away and about 15° lateral look into pt's eye
- Observe the red reflex and then move in closer
- You may rest your opposite hand on the pt's forehead above the eye to help guide
- Move the ophthalmoscope very close to the pt's eye
- If you initially see blood vessels, you can follow the blood vessels toward the disc.
- They flow like rivers toward the disc.
- Diopters may need to be adjusted to obtain a good focus





- Once you see the disc, you should note its color and note what percent of the physiologic cup involves the disc.
- The cup-to-disc ratio should be less than 0.6.
- You should note the size of the arterioles as compared to the veins. They should be 2/3 to 4/5 the size of veins.
- Next look in all 4 quadrants of the retina
- Finally, look at the fovea and macula. This may be accomplished by asking the pt to look at the light

Inspecting the Anterior Structures

- Rotate the lens progressively towards the positive diopters to around +10 to +12 visualize the anterior aspects of the eye





Panoptic Ophthalmoscope

- Focus the scope on an object about 10 to 15 feet away
- Put the aperture on the “home position” (green line)
- Start about 6 inches away at a 15° angle
- Visualize the fundus and move in until the cup is compressed against the pt’s face