## Visual acuity and Ophthalmoscopy objective :

**a) Visual acuity**

- concept of visual acuity

- measurement notations and abbreviations

- test targets

- visual acuity measurement (far and near)

- pinhole acuity test

**b) Ophthalmoscopy**

- use of direct Ophthalmoscope to assess the red reflex and detect its

abnormalities. Also to examine and comment on retinal and disc condition.

- brief about indirect ophthalmoscope

| Task | Performed | Not Performed |
|---|---|---|
| Introduce yourself | | |
| take permeation | | |
| Explain the procedure | | |
| **VISUAL ACUITY**<br>(The sharpness of near and distance vision) | | |
| Ask the patient to wear their best spectacle correction<br>(e.g. glasses or contact lenses) | | |
| Place Snellen letter chart or the E chart 20 feets away from the patient | | |
| Occlude one eye completely using the palm of their hand or an eye occlude, to allow vision testing in the opposite eye. | | |
| Have patient read the letters from the eye chart | | |
| Record visual acuity as a fraction. | | |
| Use the pinhole acuity test If the patient cannot discern the symbols on the eye chart | | |
| **Near Vision**<br>If distance visual acuity test is not practical, check for near vision using a reading card, if available, or a Snellen chart. | | |
| Ask patient to wear reading glasses if owned. | | |
| Patient holds the near test chart at about 40 cm | | |
| Test each eye separately | | |
| If visual acuity is not recordable with usual tests, check for “counts fingers”, “hand motion”, light perception, etc. | | |
| Repeat the test on the other eye | | |
| **Color Vision**<br>test with Ishihara test plates | | |

| **OPTHALMOSCOPIC DIRECT EXAMINATION**<br>Dilate patient's pupils with appropriate drug. ( or no dilation ) | | |
|---|---|---|
| Dim the light of the room | | |
| Ask patient to fix his vision on a specific point in the distance | | |
| Use ophthalmoscope in your right hand & right eye to examine the patient's right eye (left hand for left eye) | | |
| assess red reflex<br>comment on anything that interferes with the passage of light that will diminish the red reflex (e.g. large vitreous hemorrhage, cataract ) | | |
| Shine light beam from ophthalmoscope into pupil from position approximately 12 inches from the patient and about 15 degrees lateral to patient's line of vision | | |
| Move in toward patient's eye on the 15 degree line up to the point where your own fingers holding the ophthalmoscope contacts patient's cheek | | |
| Place your left hand on the patient head to fix it | | |
| Examine the posterior segment of the eye<br>1- vitreous | | |
| 2-the optic disc for :<br>- clarity of disc outline<br>- color (yellowish-orange)<br>- cup : disc ratio<br>- sharpness of disc margin<br>- presence of abnormalities surrounding the disc<br>- the blood vessels of the disc | | |
| 3- the vessels peripherally:<br>-relative sizes<br>-character of arteriovenous crossings<br>-hemorrhages or exudates | | |
| 4- Inspect macular area ( -2 disc diameters temporal to disc)<br>-fovea (foveal light reflex) | | |
| 5- Retinal background | | |
| Repeat the test on the left eye | | |

| | Direct Ophthalmoscopy | Indirect ophthalmoscopy |
|---|---|---|
| **Magnification** | About 15 times | 5 times when a +13D condensing lens is used |
| **Diameter of the field of observation\view** | Smaller (about 10° in diameter) | Wider (about 37° in diameter) |
| **Brightness** | There is relatively low brightness | There is relatively greater brightness |
| **Structures seen** | Central retina only | Peripheral retina seen *(by using a scleral depressor in addition to the indirect ophthalmoscopy itself)* |
| **Image of the fundus that is seen** | Virtual & erect image | Real & inverted image |
| **Stereopsis** | Image formed is not stereoscopic | Binocular indirect ophthalmoscopy provides better stereopsis |
| **Retina anterior to the equator** | Not well seen (seen with difficulty) | Seen better |
| **Scleral indentation** | Difficult | Can be easily done in binocular indirect ophthalmoscopy |
| **Visualization in hazy media** | Poor | Better |

**Direct ophthalmoscope know all its parts :**