

In The Name of God



(A PROJECT OF NEW LIFE HEALTH CARE SOCIETY KARACHI)

Unit # 10-A

Assessment of Eyes

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Acknowledge:

Myung-Hee Pak, RN, MSN, CNS

Learning Objectives

- Identify the structures and functions of the Eye
- Discuss how the nurse focus and prioritize subjective /objective data collection
 - pt safety issues
- Identify normal and abnormal findings
- Identify teaching opportunities for health promotion and risk reduction r/t the eye system
- Demonstrate application of the knowledge: Think like Nurse & Act like Nurse: Pulling it ALL together: Reflection and critical thinking

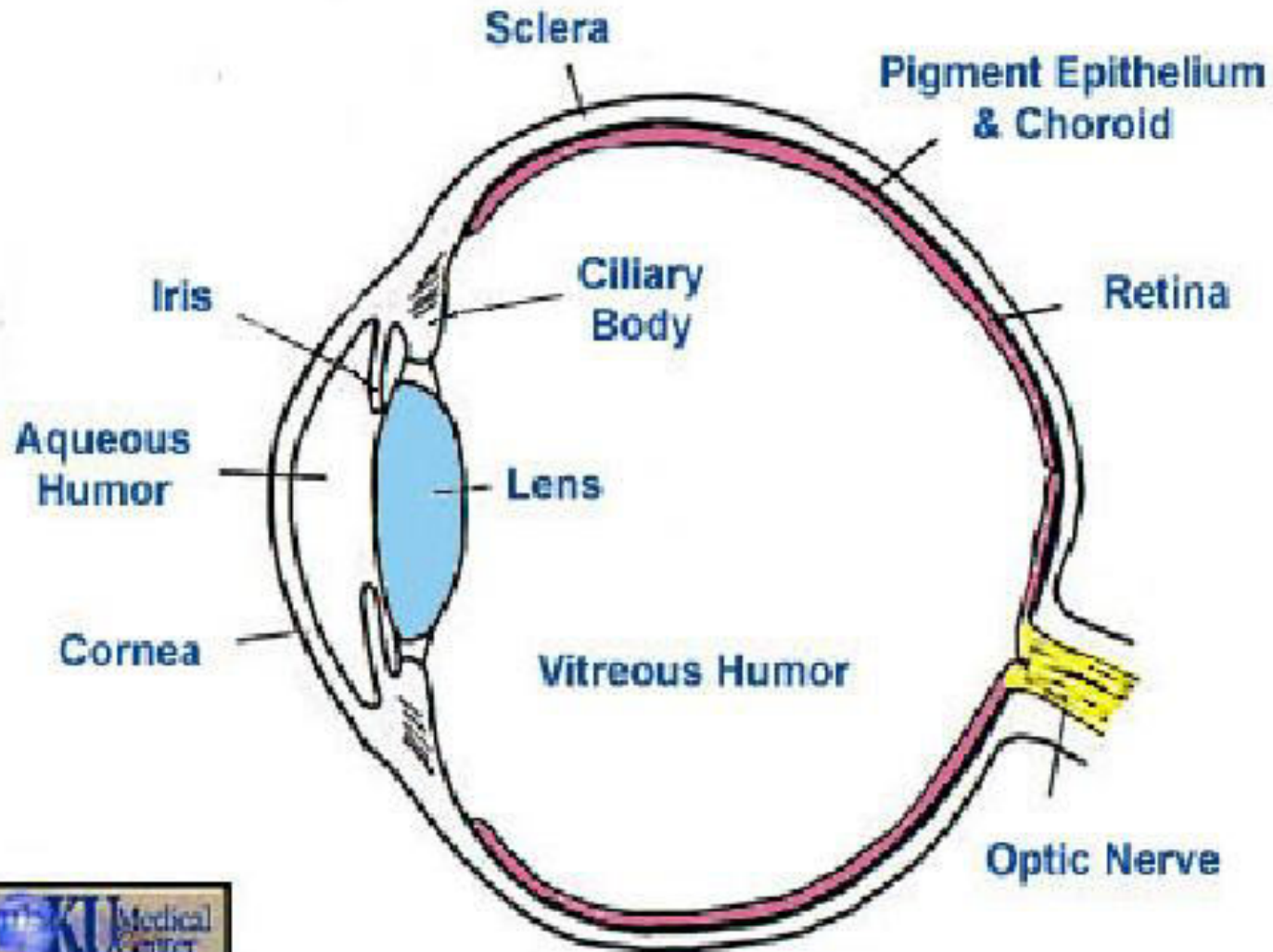
Eye Anatomy

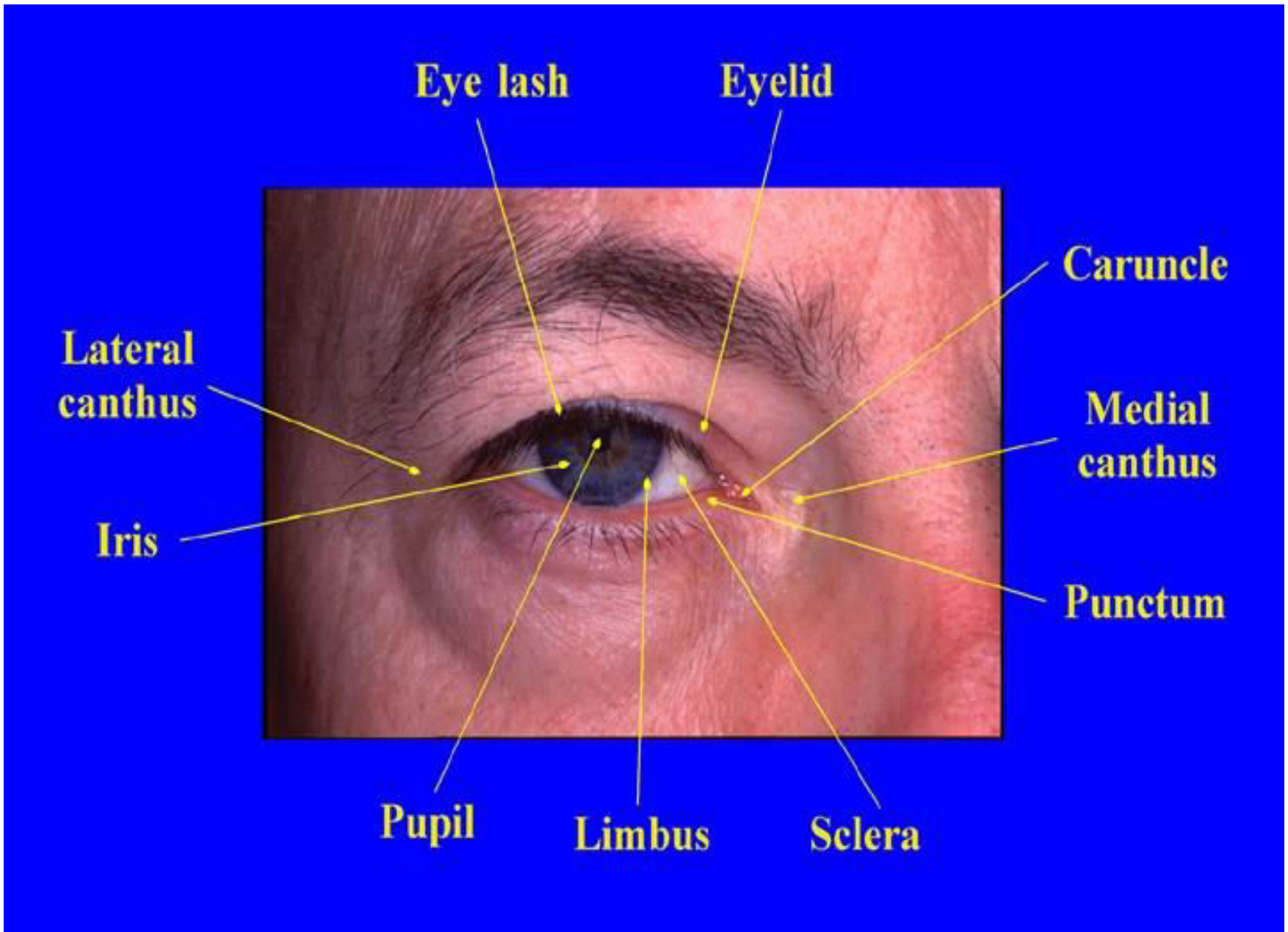
- Eye composed of three layers or tunics: sclera, uvea & retina and also is filled with vitreous humor.
- Sclera- white fibrous tissue, covers the
- “white” of the eye
- Uvea has 4 parts: vascular coat of eye behind sclera
 - 1. Choroid- vascular layer
 - 2. Iris- colored part of eye
 - 3. Pupil- contractile center of Iris, responds to light
 - 4. Ciliary body- thickened part of vascular portion of eye between iris and choroid.

Eye Anatomy

- **Retina**- inner most layer of the eye, which receives image formed by the lens
- **Vitreous Humor**- watery fluid that fills much of eye, helps maintains curve of cornea

Conti.....





Assessment of Eye: Subjective

- Any visual difficulty- decreased acuity, blurring of vision
- Pain
- Strabismus, diplopia
- Watering of eyes, discharge, redness
- Any hx. of eye problems
- Use of glasses or contact lenses



Eye Exam: Inspection



- General appearance
- Conjunctiva- pink, moist, without lesions
Conjunctiva over sclera- transparent
- Lacrimal gland- palpation, look for excessive tearing, discharge
- Sclera- usually white, even yellowing indicates jaundice

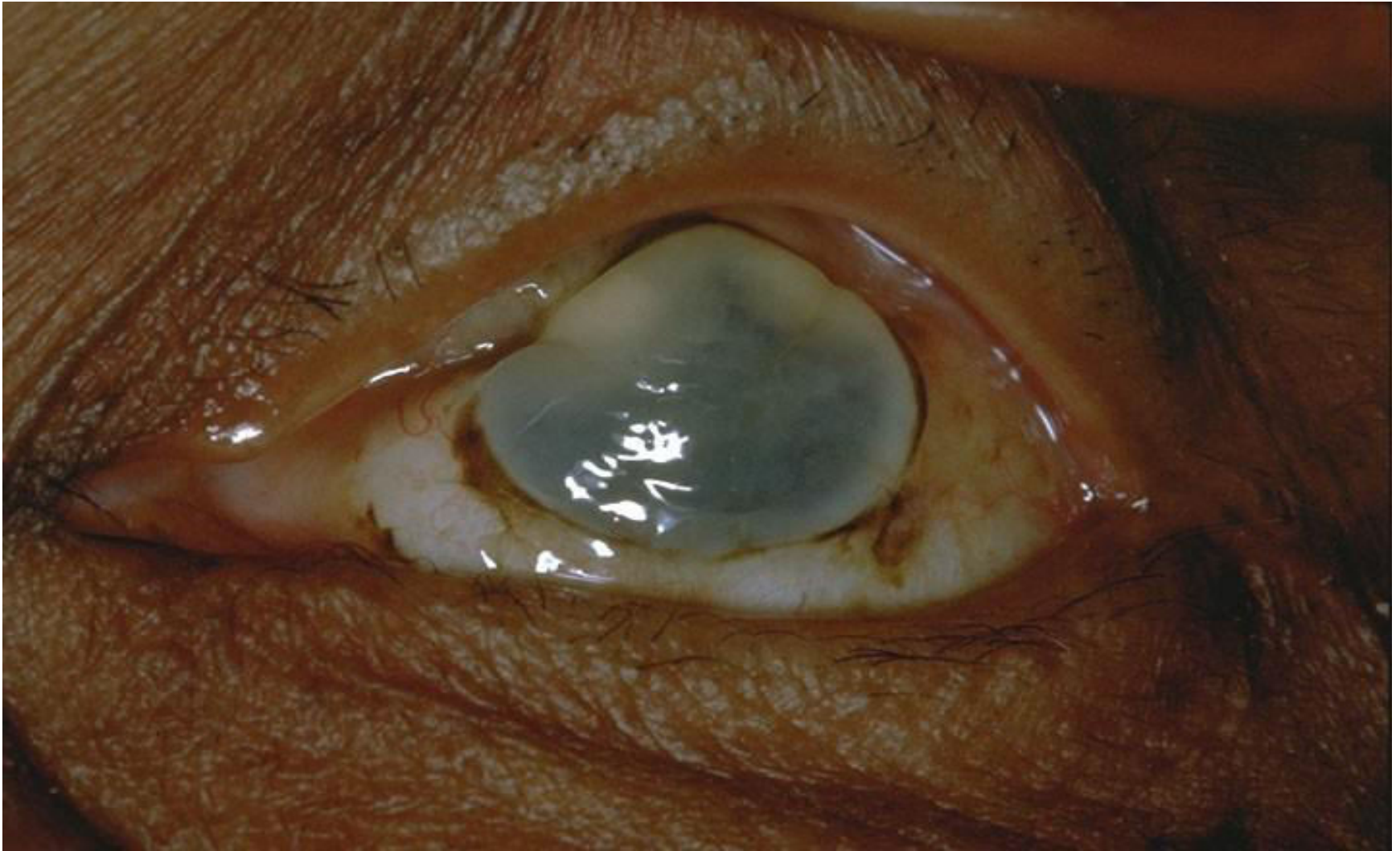
Conjunctivitis



Icterus Sclera



Corneal Opacity



Severe exophthalmia



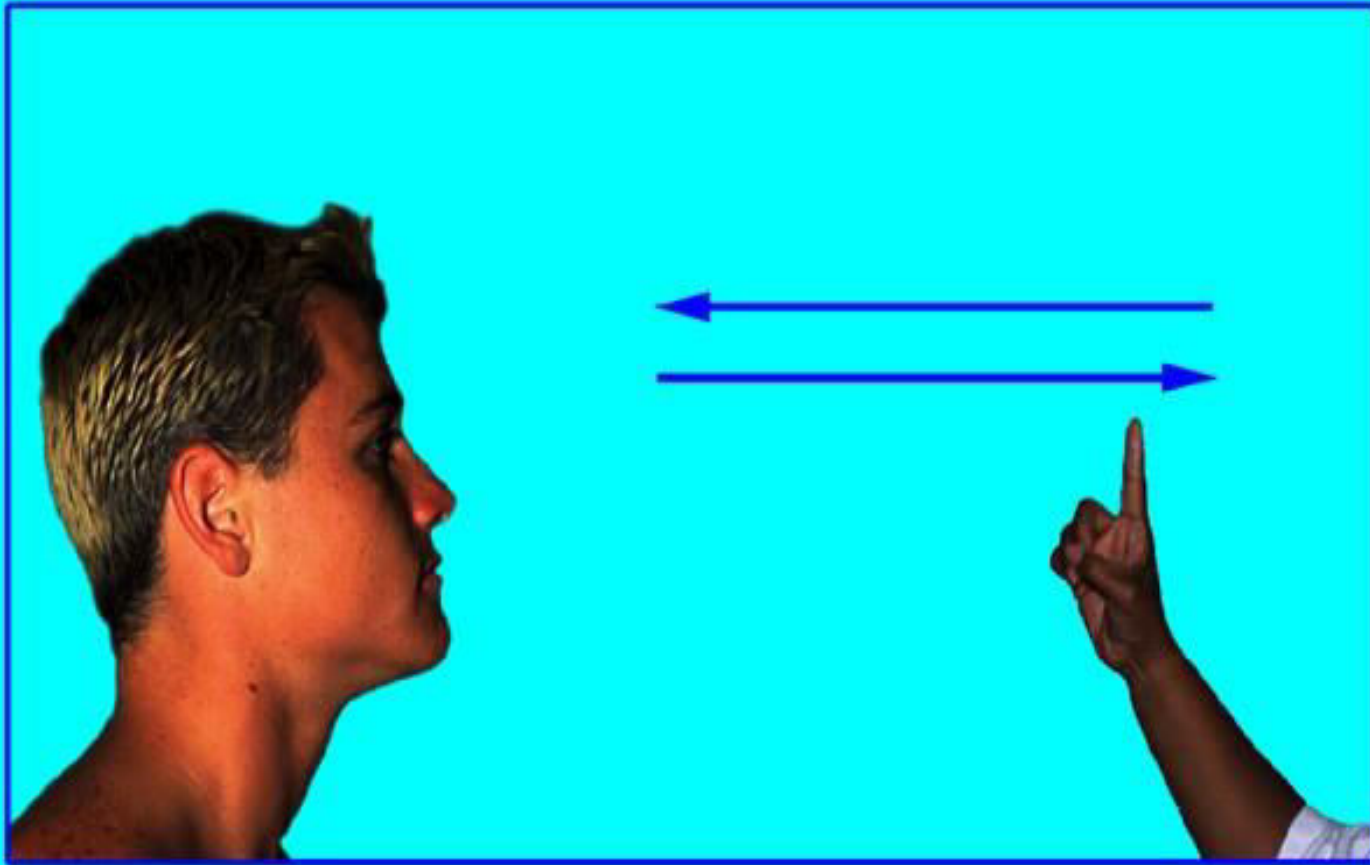
Eye Exam: Inspection

- Iris – colored part
- Pupils-round, regular, equal, 3-5mm
- Pupillary light reflex- darken room, focus on distant object, shine light from the side results in direct light reflex and consensual light reflex

Eye Inspection

- Accommodation and convergence: focus on a distant object then hold finger about 2” from persons’ eyes, ask person shift focus to finger as it moves closer to his/her nose... resulting in:
 - **Accommodation**-pupils constrict
 - **Convergence**- eyes move inward
 - **PERRLA**

Accommodation and Convergence



Direct and Consensual light reflex



Testing Visual Acuity

- 20 feet distance – Snellen eye chart, may wear glasses.
- Visual Acuity is written as a fraction
- **Numerator** = distance person stood from chart
- **Denominator** = distance normal eye can read the line of letters.

- Normal distant visual acuity is 20/20. (Feet)
- Normal near visual acuity is 14/14. (Inches)

Testing Visual Acuity

- **Nearsightedness**
- Larger denominator- poorer the vision
- 20/100 = person had to be as close as 20' to read what normal vision person can read at 100'



Read on that side of the chart.

60 20

E 1

40 **F P** 20 2

30 **T O Z** 20 3

20 **L P E D** 20 4

15 **P E C F D** 20 5

10 **E D F C Z P** 20 6

5 **F E L O P Z D** 20 7

3 **D E F P O T E C** 20 8


2 **L E F O D P C T** 20 9

1 **F D P L V O H O** 20 10

0 **P E R O L C P T P** 20 11

Read on that side of the chart.

60 20



E 20 1

15 **M E** 20 2

10 **W W M** 20 3

5 **E W E W** 20 4

3 **M W W W** 20 5

2 **E W W M E W** 20 6

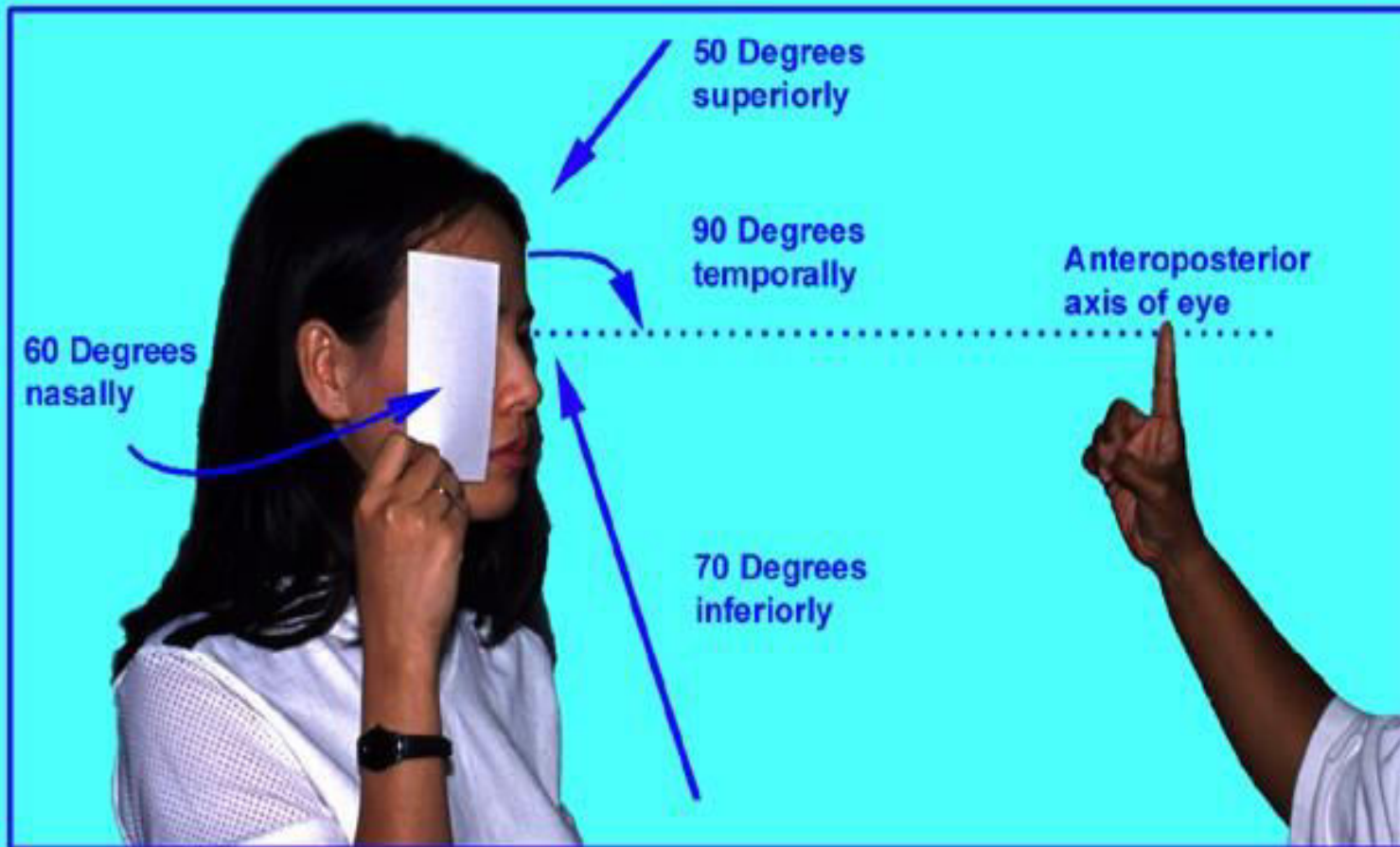
1 **E W W W W W** 20 7

0 **.....** 20 8

Testing Visual Fields

- Confrontation Test
- Face person 2-3' away
- Person covers L. eye, examiner covers R. look at each others uncovered eyes.
- Fully extend L. arm – bring your hand in along main axis of visual fields – Superior, inferior, temporal and nasal.
- Wiggle your fingers and instruct person to indicate when finger is first seen.

Range of Peripheral Vision



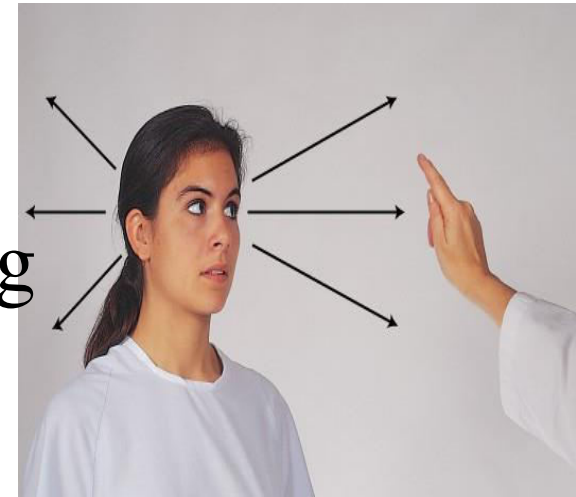
Extraocular Muscle Function

- EOM Tests Cranial Nerves – III, IV and VI
- **Diagnostic Positions Test**-Follow finger and keep head stationary, move through 6 fields of gaze, returning to central starting point before going to next field
- **Corneal light reflex (The Hirschberg Test)**- reflection of light same spot on each eye.

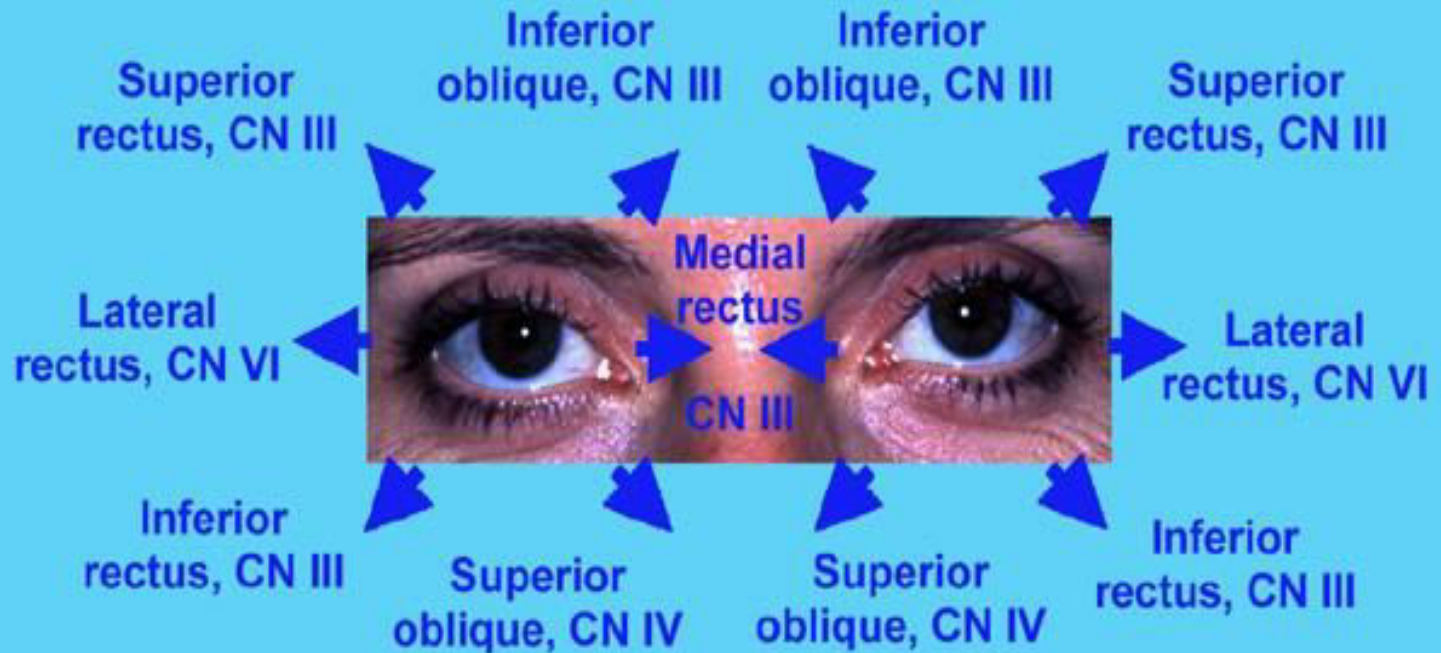
Objective Data—Physical Exam

(cont.)

- Extraocular muscle function—
Inspect
- **Corneal light reflex** (Hirschberg test): parallel alignment of the eyes axes
- **Cover test:** steady fixed gaze, or
Detect deviation in alignment
- **Diagnostic positions test:** parallel tracking of the object with both eyes and no lid lag

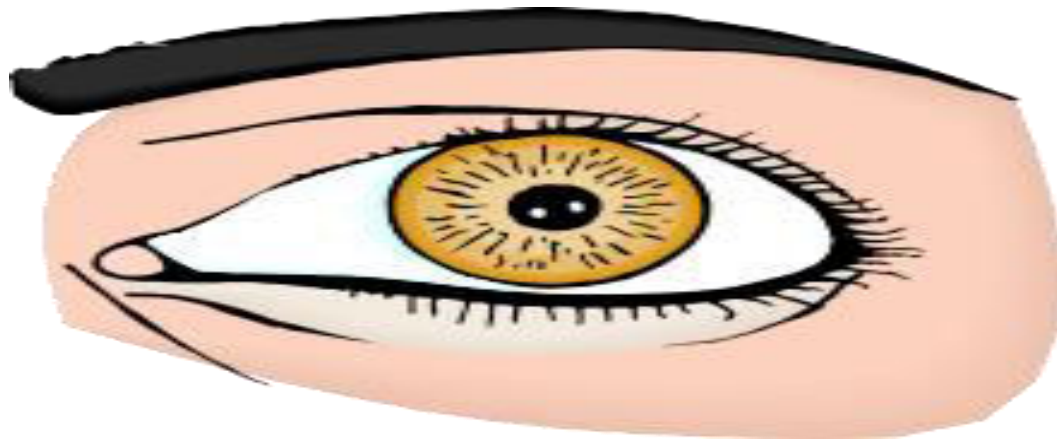


The Six Cardinal Fields of Gaze



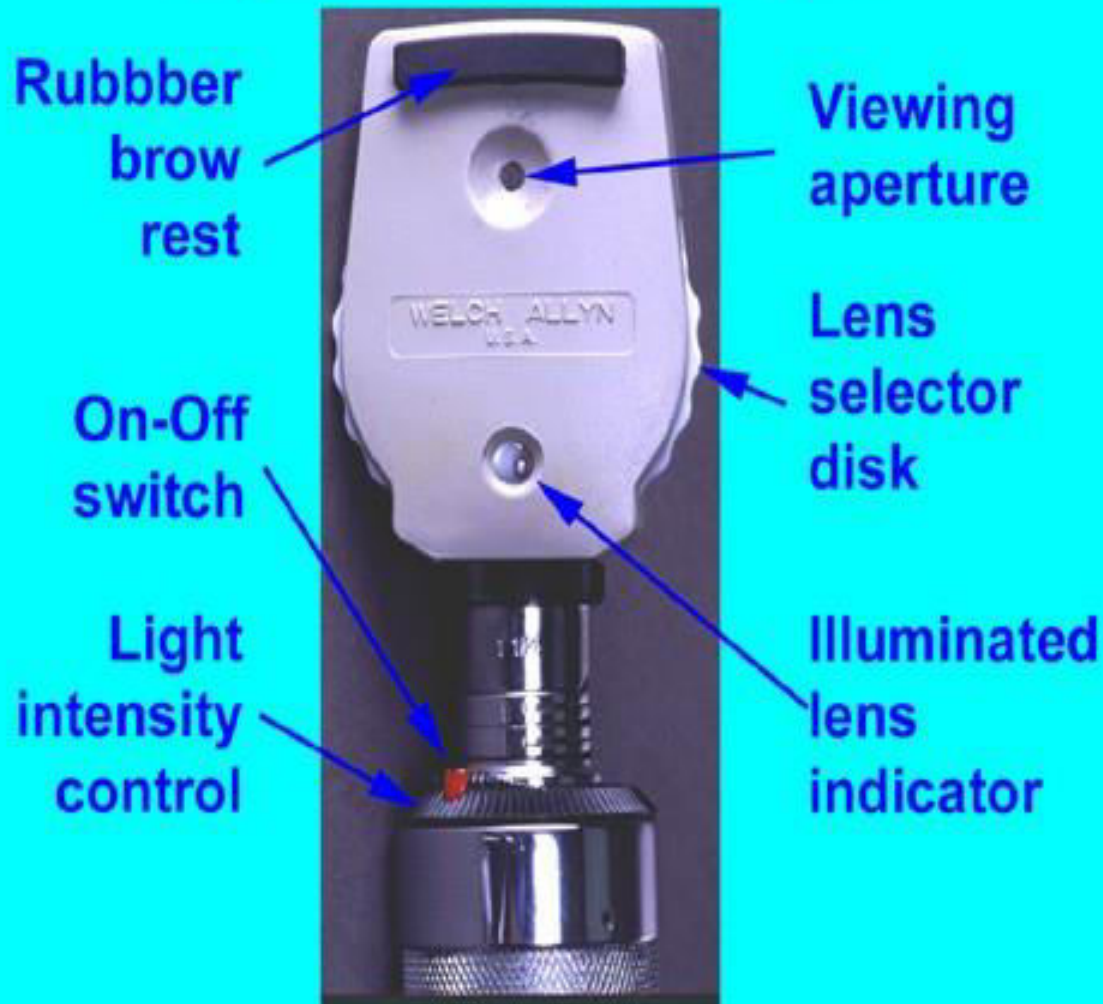
Inspecting Ocular Fundus

- Ophthalmoscope enlarges view of inner eye
- Beam of light through the pupil illuminates inner structures



The Human Eye

Ophthalmoscope



Inspection of Ocular Fundus

- General background of Fundus- color normally varies from light red to dark brown – red, generally corresponding with skin color.
- View should be clear, without lesions obstructing retinal structures.

Ophthalmic Exam

- Darkened room, instruct person to look at distant point and keep focused.
- Hold with your R. hand when inspecting R. eye, lens set at 0.
- Begin— 15 degrees lateral to person's line of vision – shine ophthalmoscope toward
- R. pupil
- **Red Reflex** – is caused by the reflection of the light off the inner retina: orange red coloration of fundus (anterior chamber) visible through pupil

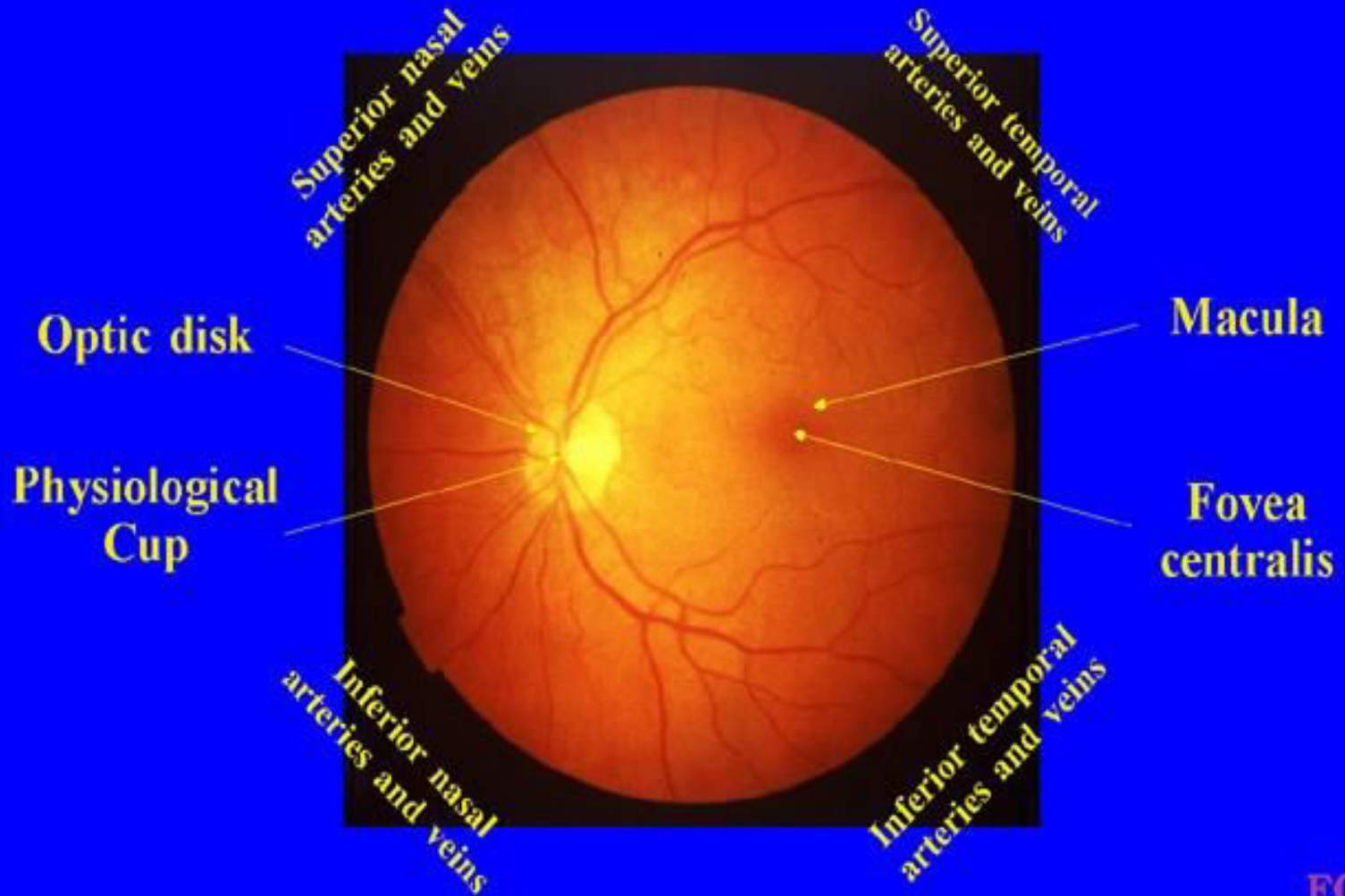
Ophthalmic Exam

- Move toward person, till examiners forehead almost touches thumb placed on person's forehead
- Move scope toward positive numbers, inspect anterior chamber and lens for transparency.
- Rotate lens back to 0, then focus on retinal structures, rotate lens to sharpest focus.
- Inspect optic disc, if can't find it, follow a vein along and it will lead to disc.

Optic Disc

- **Optic disc-** on nasal side of retina.
- **Color-** creamy yellow-orange to pink.
- **Shape-** round or oval.
- **Margins-** Distinct and sharply demarcated, nasal edge may be slightly fuzzy.

Retina- Left eye



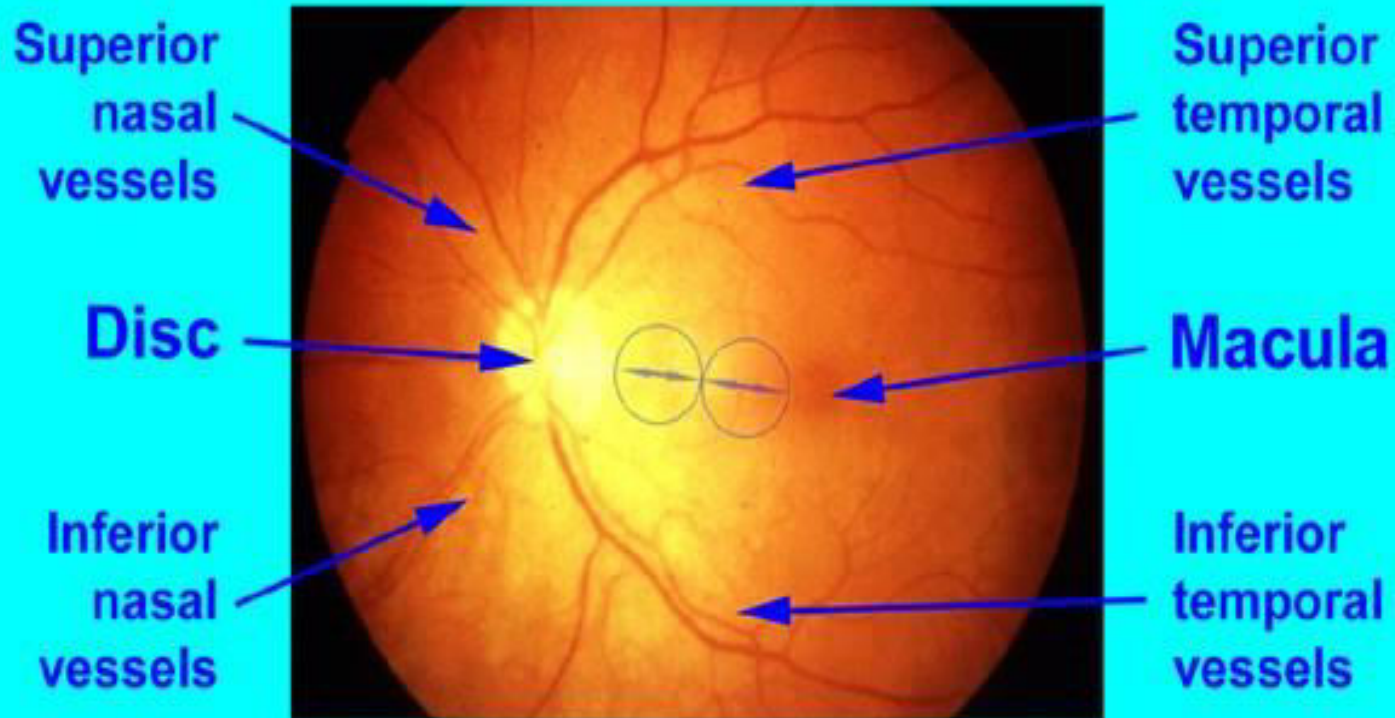
FOL

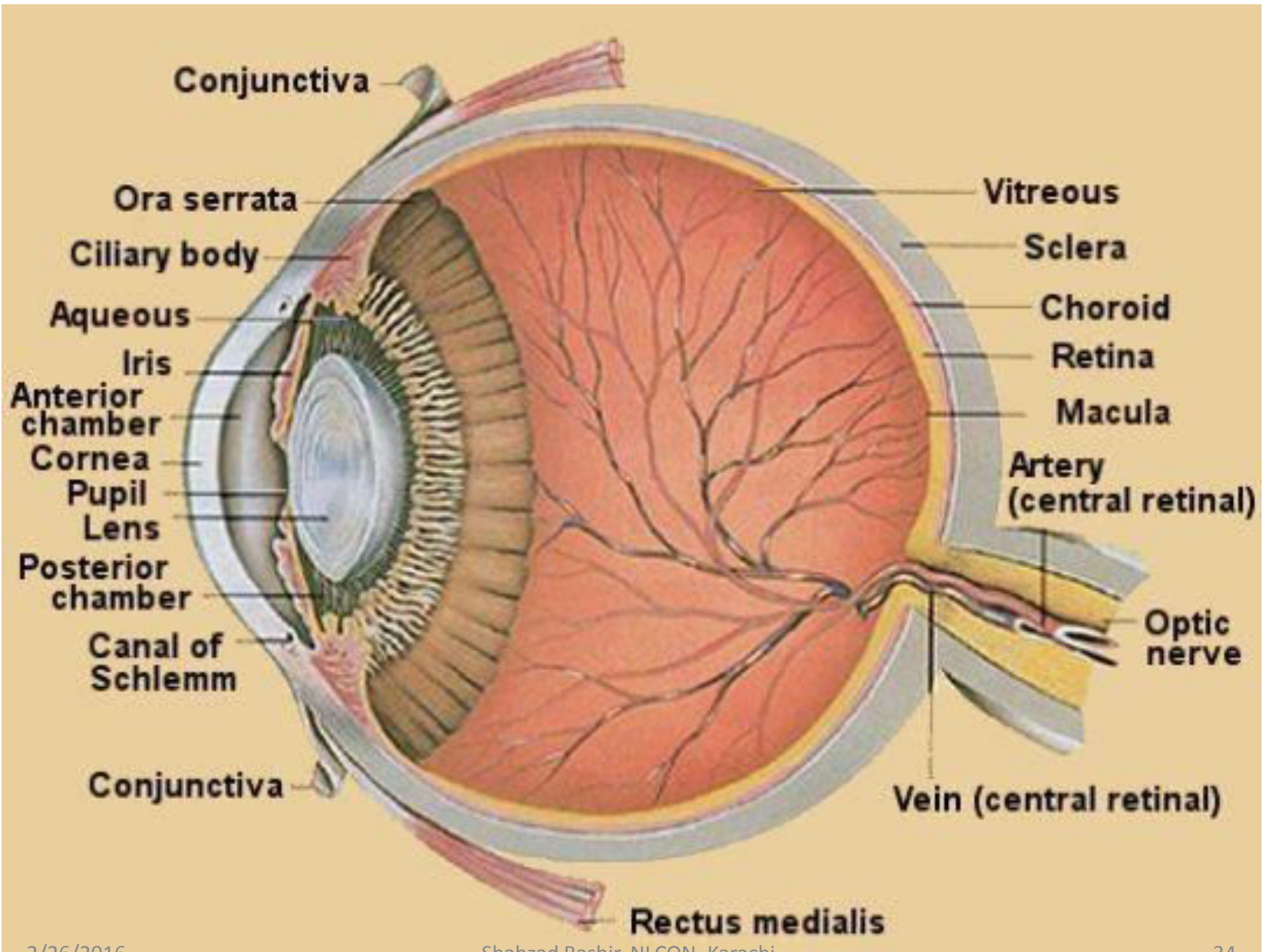
Ophthalmic Exam

- **Physiologic cup-** is slightly depressed and lighter in color than the remainder of cup; the cup occupies $\frac{1}{2}$ of disc diameter
- **Cup disc ratio-** When visible, physiologic cup is a brighter yellow- white and width is not more than $\frac{1}{2}$ disc diameter.

Location of Macula

Two disc diameters temporal to Disc





Sample Charting

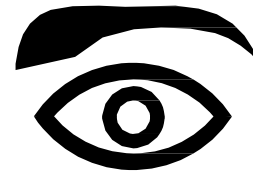
- **Subjective**
- Vision reported good with no recent change. No eye pain, no inflammation, no discharge, no lesions, Wears corrective lenses, vision last tested 1 year PTA, test for glaucoma at that time was normal.

Sample Charting

- **Objective**
- Snellen chart-Rt. eye 20/20, Lt eye 20/20, Peripheral vision intact by confrontation. Corneal light reflex symmetric bilaterally. Diagnostic positions test shows EOMs intact. Brows and lashes present. No ptosis. Conjunctiva clear.
- Sclera white without jaundice, No lesions. PERRLA.
- Fundi-Red reflex present bilaterally. Disc flat with sharp margins. Vessels present in all quadrants without crossing defects. Retinal background has even color with no hemorrhages or exudates. Macula has even color.

Summary-Assessment Includes

- Subjective data
- Inspection
- Visual Acuity
- Visual Fields
- EOMuscle functioning
- Ophthalmic Exam
- Sample Documentation



References

1. Bickley, L. S., Szilagyi, P. G., & Bates, B. (2007). *Bates' guide to physical examination and history taking (11th Edi)*. Philadelphia: Lippincott Williams & Wilkins. Chapter No.06 & 07 p.n 171-250
2. Weber, Kelley's. (2007). *Health Assessment in Nursing, 3rd Ed: North American Edition*. Lippincott Williams & Wilkins. Chapter No.14 &15 p.n 239-294