Assessment of Eyes

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Learning Objectives

• Identify the structures and functions of the Eye
• Discuss how the nurse focus and prioritize subjective/objective data collection
• Identify normal and abnormal findings
• Identify teaching opportunities for health promotion and risk reduction rt 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.
• **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

Eye Videos

• Blinking:
• Corneal Injury:
• Cataract:
• Diabetes- retinal conditions:
• Glaucoma:
• Macular degeneration:
• Retina:
**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

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.
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’

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.

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
- 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

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.

Ophthalmic Exam

- **Physiologic cup** - is slightly depressed and lighter in color than the remainder of cup; the cup occupies ½ of disc diameter.
- **Cup disc ratio** - When visible, physiologic cup is a brighter yellow-white and width is not more than ½ disc diameter.

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