EYE ASSESSMENT & DIAGNOSTICS

I. Assessment/ Diagnostics

Subjective Data:

- Patient History
    1. History of Systemic Diseases-DM, HTN, CA, Family History
    2. Do they have any specific eye complaints?
    3. History of eye surgery, laser procedures, or injuries?
    4. Exposure to chemicals/dust/particles/excessive sun at work?
- Medication History

  Beta Blockers, OTC med, Long-term Corticosteroids, Allergies
- Inspection

  -Ptosis: eyelid drooping or inversion of the lid

  -Anisocoria: pupils unequal in size

  Globe of the eye

  -Exopthalmos: bulging of the eye outwards

  -Enophthalmos: sunken appearance of the eye

  Conjunctiva- should be clear with fine blood vessels in normal eye

  Iris- differences in color can occur and is not a significant finding
- Visual acuity
    - Snellen Chart- Stand 20 ft from chart, cover one eye, read chart with uncovered eye
    - 20/100 means pt can read at 20 ft letters that a person with normal vision can read at 100ft
  - Eye Abbreviations for charting visual acuity- Right OD, Left OS, Both OU
- Jaegar Chart- tests near vision, hold chart 14 inches away and read smallest line
- Refractometry- used at eye doctor office. Multiple lenses mounted on a rotating wheel. Tell me which one is clearer, option 1 or 2 while reading snellen chart
- Extraoccular Muscle Function

  corneal light reflex-determines light reflex symmetry of the eyes

  six cardinal positions of gaze-patient follows examiners finger through a N or wide H
- Visual fields test peripheral vision

  Confrontation Test

- Pupils

  PERRLA

II. Diagnostic Tests

- Ophthalmoscope
  - Evaluate: Optic Disk, Retina, Macula, Red Reflex
- Slit Lamp Exam-magnifies the front of the eye including eyelids, conjunctiva, lens, iris, sclera, and cornea as well as optic nerve and retina. Can assess for macular degeneration, detached retina, cataracts, cornea injury or blockage of the retinal vessels.
- Intraocular Pressure-normal Intraocular pressure is 10-21 mmHg
  - Tonometry-measures pressure of air needed to indent small area of the anterior eye.
  - Tonopen or tonometer- is a handheld probe that is touched several times to an anesthetized cornea to measure IOP.
- Retinal Imaging

  CT Scan, MRI, and Ultrasound

  Fluorescein angiography- Invasive procedure

  Optical Coherence Tomography- The optomap test
- Ishihara Test-tests for color vision
- Amsler Grid- tests for macular degeneration

II. Health Promotion and Maintenance

A. Protection & Teaching

1. Prevention
2. enforcement of safety regulations
3. sunglasses
4. Avoid eye strain, be gentle with eyes, don't rub habitually!
5. Good lighting for reading
6. Glasses and contact lens use as prescribed
7. Wash hands before touching eyes, don't share eye products
8. Caution with harmful cleaning fluids/sprays etc..

B. 7 Eye Danger Signals

- Redness, pain or photophobia, visual disturbances, crossing of eyes, growths, pupil irregularities, discharge, crusting, or tearing

III. Eye Care Specialists

A. Ophthalmologist-Physician who provides total eye care, specializes in diagnosis of eye diseases, and treatment including surgical care

B. Optometrist-Physician with education in vision, assessment, and treatment with medications of visual problems. Can not perform surgery.

C. Optician- person who shapes, grinds, and fits lenses according to prescriptions from an optometrist or ophthalmologist.

IV. Geriatric Considerations

1. Eyelids- tissue atrophy, decreased tone, ptosis.
2. Arcus senilis-milky white yellow ring around iris, from cholesterol. No vision change.
3. Sclera color changes- yellow from lipids, sclera thins becomes blue in color
4. Lacrimal System- as we age, decreased tear production leads to dryness
5. Eye structure changes that impair vision
    a. Cornea- lipid deposit buildup, blurs vision
    b. Lens and ciliary muscles- becomes more rigid, impairs accommodation and focus
    c. Lens yellow/opacities which interferes with light transfer
    d. Dilator muscles weaken, pupil size changes and pupil become sluggish
    e. Retina-decrease in photoreceptor cells, color perception affected, visual acuity affected

V. Common Nursing Considerations

A. General procedure instructions- wash hands before working with eye care, clean unaffected eye first, be gentle, sterile droppers/sterile drops and adequate lighting.

B. Ocular Irrigation- to remove chemicals/foreign bodies. Anesthetize eye prn.

C. Solutions

1. Advantages: easily instilled, doesn’t interfere with vision usually

2. Disadvantage: Frequent admin needed
3. Procedure: clean eye, tilt head back, drops placed lower conjunctiva
4. Punctal pressure: to prevent systemic absorption

D. Ointments

1. advantages: stay in contact with eye longer
2. disadvantages: blur vision and can cause skin irritation
3. place from inner canthus to outer canthus