

EYE ASSESSMENT & DIAGNOSTICS

I. Assessment

- Subjective Data: History
 - History of Systemic Diseases-DM, HTN, CA, Family History
 - Do they have any specific eye complaints?
 - History of eye surgery, laser procedures, or injuries?
 - 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
 - Exophthalmos: 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
- Refractometry- Multiple lenses mounted on a rotating wheel. Which is clearer, option 1 or 2 while reading snellen chart
- Extraocular 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
- 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.
- 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

III. Health Promotion and Maintenance

- Protection & Teaching
 - Prevention
 - enforcement of safety regulations
 - sunglasses
 - Avoid eye strain, be gentle with eyes, don't rub habitually!
 - Good lighting for reading
 - Glasses and contact lens use as prescribed
 - Caution with harmful cleaning fluids/sprays etc..
 - 7 Eye Danger Signals
 - Redness, pain or photophobia, visual disturbances, crossing of eyes, growths, pupil irregularities, discharge, crusting, or tearing

IV. Eye Care Specialists

- o Ophthalmologist-Physician who provides total eye care, specializes in diagnosis of eye diseases, and treatment including surgical care
- o Optometrist-Physician with education in vision, assessment, and treatment with medications of visual problems. Can not perform surgery.
- o Optician- person who shapes, grinds, and fits lenses according to prescriptions from an optometrist or ophthalmologist.

V. Geriatric Considerations

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

VI. Common Nursing Considerations

- o General procedure instructions- wash hands, clean unaffected eye first, be gentle, sterile droppers/sterile drops and adequate lighting.
- o Ocular Irrigation- to remove chemicals/foreign bodies. Anesthetize eye prn.
- o Eye Drops
 - Advantages: easily instilled, doesn't interfere with vision usually
 - Disadvantage: Frequent admin needed
 - Procedure: clean eye, tilt head back, drops placed lower conjunctiva
 - Punctal pressure: to prevent systemic absorption

o Eye Ointments

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