



MEDICAL AND OPTOMETRY STUDENT GUIDE

INTRODUCTION

First off, welcome to our office and to the world of ophthalmology. It is our mission to teach you the basic principles of the examination and understanding of the eye. Our goal is for you to feel comfortable examining an eye in the emergency room or primary care setting. For those of you interested in a residency in ophthalmology, this will be a great starter for future audition rotations. Although we are a busy private practice, we offer a welcoming and educational atmosphere to all students. Please come prepared. To help you, we have created this introduction and guide. You will be asked “pimp” questions and you will be given daily assignments. This rotation has a heavy neuro-ophthalmology emphasis as these diagnoses can often times be life threatening (Hint, Hint). Know your eye, orbit and neuro-anatomy well (especially for surgery).

MEDICAL AND OPTOMETRY STUDENT LIASON

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All inquiries should be sent attention Heidi.

WHEN & WHERE TO SHOW UP/DRESS CODE

- 8:00 AM on the first day of your rotation and let the front desk you have arrived.
- 3192 Willow Creek Road Prescott, Az 86301
- Please wear professional attire. We do not require white coats or ties.
- Please wear your name badge given by the University.

GOALS/REQUIREMENTS

- All students should become familiar with:
 - Proper documentation of an eye exam
 - How to call in an ophthalmology consult
 - Basic eye examination techniques
 - Slit lamp microscope
 - Tonopen
 - Direct ophthalmoscopy
 - Diagnosis and treatment plans of pathologies listed on the study guide
 - IV line placement prior to cataract surgery (Anesthesiologist will teach)

- 10 minute power point presentation -Topic will need to be approved by Dr. Markham
- For optometry students and medical students wanting to pursue a residency in ophthalmology:
 - Refraction
 - Indirect Ophthalmoscopy
 - Use of 90 diopter lens with Slit Lamp

BASIC EYE EXAMINATION COMPONENTS

The eye examination has some key components which should always be followed and documented.

Right eye (OD) and left eye (OS) should be documented accordingly.

Visual Acuity

Pupils

Extra-ocular motility (EOM) and alignment

Please refer to article, The Bedside and Office Neuro-Ophthalmology Examination, by JaJames Corbett, MD for pupils and EOM examination

Intraocular pressure

Eyelids/Lashes/Lacrimal Gland

Conjunctiva/Sclera

Cornea

Anterior Chamber

Lens

Optic Nerve with Cup to Disc Ratio

Blood Vessels

Macula

Peripheral Retina

Media/Vitreous

OPHTHALMOLOGY ROTATION STUDY GUIDE

TRAUMA

Chemical Burn – Acid/Base

Corneal Abrasion

Corneal and Conjunctival Foreign Body/Rust Ring

Hyphema

Orbital Blow-Out Fracture

Traumatic Retrobulbar Hemorrhage

Ruptured Globe

CORNEA

- Pterygium/Pingueculum
- Herpes Simplex
- Herpes Zoster Ophthalmicus
- Wilson's Disease

CONJUNCTIVA/EXTERNAL DISEASE

- Acute Conjunctivitis
- Subconjunctival Hemorrhage

EYELID/ORBIT

- Chalazion/Hordeolum
- Preseptal Cellulitis
- Orbital Cellulitis
- Thyroid Eye Disease

PEDIATRICS

- Leukocoria
- Amblyopia

GLAUCOMA

- Primary Open Angle Glaucoma
- Narrow Angle and Acute Angle Closure Glaucoma

NEURO-OPHTHALMOLOGY

- Anisocoria
- Horner's Syndrome
- Adie's Tonic Pupil
- Isolated Third-Nerve Palsy
- Isolated Fourth-Nerve Palsy
- Isolated Sixth-Nerve Palsy
- Isolated Seventh-Nerve Palsy
- Multiple Cranial-Nerve Palsy (Cavernous Sinus Syndrome/Superior Orbital Fissure Syndrome)
- Myasthenia Gravis (Ocular vs. Systemic)
- Papilledema
- Pseudotumor Cerebri

Optic Neuritis

RETINA

Central Retinal Artery Occlusion

Central Retinal Vein Occlusion

Hypertensive Retinopathy and Optic Neuropathy

Amaurosis Fugax

Age Related Macular Degeneration

Posterior Vitreous Detachment (Floaters)

Diabetic Retinopathy

SYSTEMIC

Diabetes Mellitus

Neurofibromatosis Type I/Type II

Multiple Sclerosis

HEADACHE

Migraine

Ocular Migraine

Cluster Headache

COMMON OPHTHALMIC MEDICATIONS

Acular (ketorolac tromethamine ophthalmic solution) 0.5% Treatment for post-surgical inflammation following cataract extraction.

Acuvail (ketorolac tromethamine) For the treatment of pain and inflammation following cataract surgery.

AK-Con-A (naphazoline ophthalmic) Over-the-counter combination vasoconstrictor/antihistamine product for ophthalmic use

Akten (lidocaine hydrochloride) For anesthesia during ophthalmologic procedures

Alamast pemirolast potassium ophthalmic solution

Alphagan (brimonidine) Treatment for open-angle glaucoma and ocular hypertension

Alrex Treatment for seasonal allergic conjunctivitis

Astepro (azelastine hydrochloride nasal spray) For the treatment of seasonal and perennial allergic rhinitis

Avastin (Bevacizumab) Injection Used to treat wet age-related macular degeneration (AMD; an ongoing disease of the eye that causes loss of the ability to see straight ahead and may make it more difficult to read, drive, or perform other daily activities). Avastin is in a class of medications called vascular endothelial growth factor A (VEGF-A) antagonists. It works by blocking abnormal

blood vessel growth and leakage in the eye(s) that may cause vision loss in people with wet AMD.

AzaSite (azithromycin) For the treatment of bacterial conjunctivitis

Bepreve (bepotastine besilate ophthalmic solution) For the treatment of itching associated with allergic conjunctivitis

Besivance (besifloxacin ophthalmic suspension) For the treatment of bacterial conjunctivitis

Betaxolol For lowering IOP in patients with chronic open-angle glaucoma or ocular hypertension

BSS Sterile Irrigating Solution Treatment during ocular surgical procedures

Cosopt Treatment for glaucoma or ocular hypertension

Durezol (difluprednate) For the treatment of inflammation and pain associated with ocular surgery

Lotemax Treatment for post-operative eye inflammation

Lucentis (ranibizumab) For the treatment of neovascular (wet) age related macular degeneration. See Avastin.

Lumigan (bimatoprost ophthalmic solution) For the reduction of intraocular pressure in patients with open-angle glaucoma or ocular hypertension

Macugen (pegaptanib) For the treatment of wet age-related macular degeneration.

Ocuflox (ofloxacin ophthalmic solution) 0.3% Treatment for corneal ulcers OcuHist Over-the-counter antihistamine eye drop

Ozurdex (dexamethasone) For the treatment of macular edema following branch retinal vein occlusion or central retinal vein occlusion

Quixin (levofloxacin) For treatment of bacterial conjunctivitis

Rescula (unoprostone isopropyl ophthalmic solution) 0.15% For the treatment of open-angle glaucoma or ocular hypertension

Restasis (cyclosporine ophthalmic emulsion) For the treatment of low tear production.

Salagen Tablets Treatment for Sjogren's Syndrome

Travatan (travoprost ophthalmic solution) For the reduction of elevated intraocular pressure in patients with open-angle glaucoma or ocular hypertension

Valcyte (valganciclovir HCl) For the treatment of cytomegalovirus retinitis in patients with AIDS

Viroptic Treatment for inflammation of the cornea in children due to herpes simplex virus

Vistide (cidofovir) Treatment for cytomegalovirus (CMV) retinitis

Visudyne (verteporfin for injection) For the treatment of wet age-related macular degeneration (wet AMD)

Vitrasert Implant Drug delivery system for the treatment of cytomegalovirus

Vitrvane Injection Treatment for CMV in AIDS patients

Zatidor Treatment for the prevention of itching of the eye

Zirgan (ganciclovir ophthalmic gel) For the treatment of acute herpetic keratitis

Zymaxid (gatifloxacin ophthalmic solution) For the treatment of bacterial conjunctivitis