

“Help, I Can’t See”

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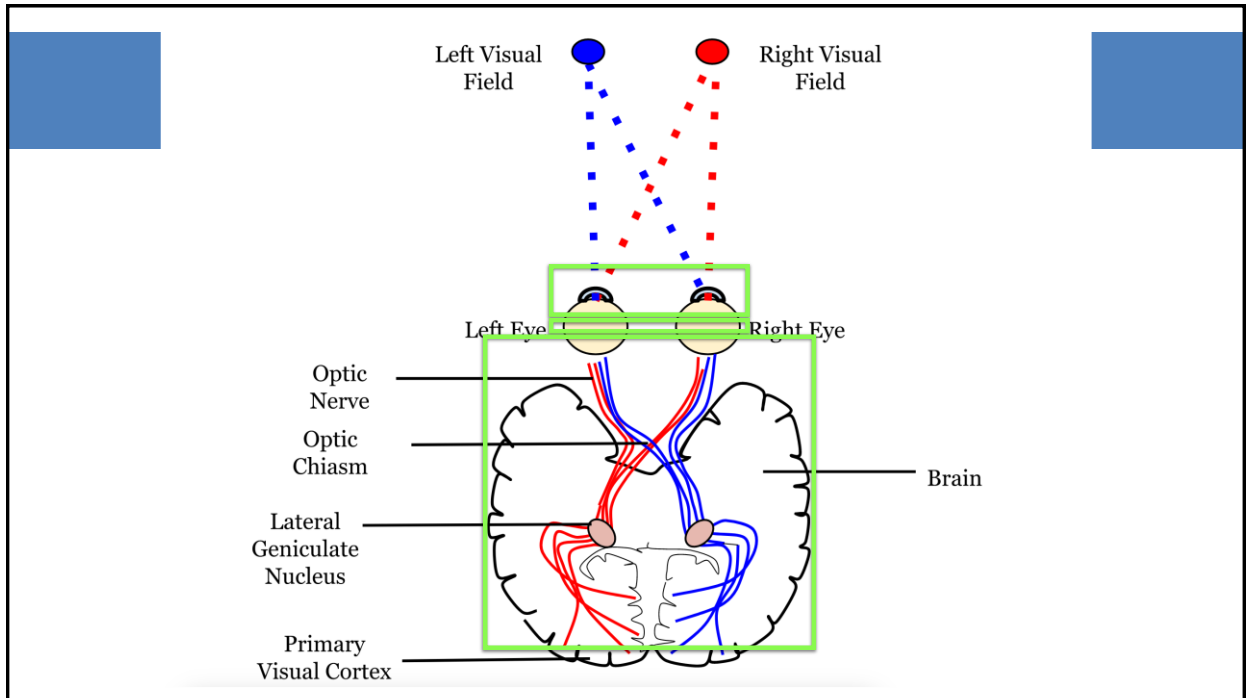
Disclosure

I have no financial interests or relationships to disclose.



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Rebecca Bloch, MD
Help, I Can't See!



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History

- Vascular disease? DM, HTN
- Hypercoagulable/anticoagulated
- Baseline visual acuity
 - Contact lenses, recent eye surgery
- Medications affecting vision

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History

- Transient vs Continuous
- Monocular vs Binocular
- Painful vs Painless
- Partial vs Complete
- Central vs Peripheral
- Other Associated Symptoms

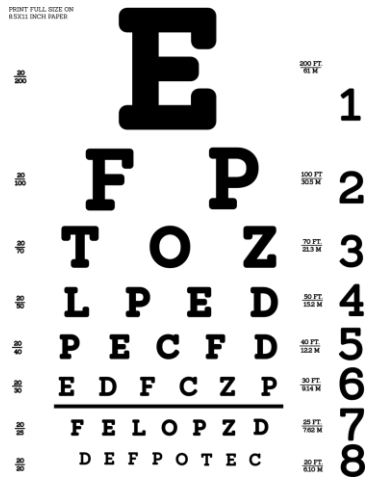
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General Inspection



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Visual Acuity



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Pupils



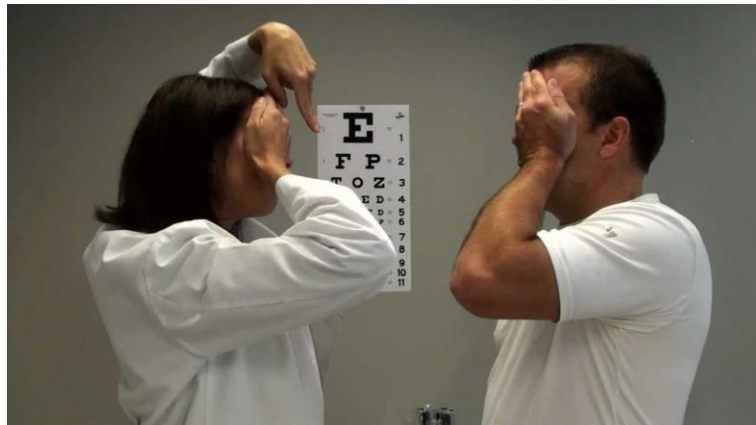
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Extraocular Movements



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Visual Fields



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Fundoscopy



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Ocular Ultrasound



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Fluorescein



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Intraocular Pressure



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Slit Lamp



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Neurologic Exam



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Case 1

- 35 yo female
- R eye visual changes
- Dark gray spot in central vision
- Pain “behind eye”, worse with EOM



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Our Patient

- Transient vs **Continuous**
- **Monocular** vs Binocular
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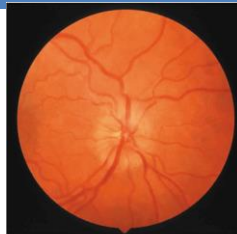
Optic Neuritis

- Demyelinating disorder of optic nerve
- Often age <50
- Progressively worse over days
- Central vision loss, peripheral vision maintained- big clue!
- Classic association with multiple sclerosis

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Optic Neuritis- Exam

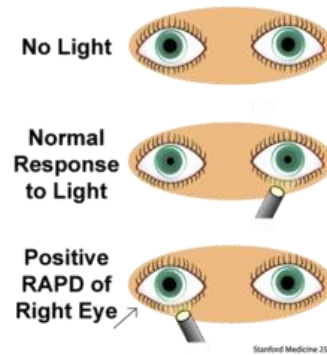
- Classic finding- optic disc pallor
- Loss of central vision
- Afferent pupillary defect
- Red desaturation test



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Afferent Pupillary Defect

- Swinging flashlight test
- Means that an optic nerve lesion is present on side of the dilating pupil (light is not stimulating the optic nerve on that side)



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Optic Neuritis-Treatment

- Steroids
 - IV methylprednisolone
 - Discuss with Ophthalmology and Neurology

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Causes for Optic Neuritis

- Idiopathic
- Immune disorders- Classically multiple sclerosis
- Infectious etiologies- Syphilis, measles, TB

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Case 2

- 75 yo female
- Headache- worsened by chewing
- L eye vision loss
- Myalgias and fatigue
 - Proximal myelopathy



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Our Patient

- Transient vs Continuous
- Monocular vs Binocular
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- Other Associated Symptoms

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Giant Cell Arteritis

- Get ESR- >50 suspicious for diagnosis
- Tx- steroids
 - Vision loss- IV 500-1000 mg methylprednisolone, admit
 - No vision loss- prednisone 1mg/kg PO, outpatient
- Confirmation- temporal artery biopsy

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Case 3

- 60 yo male
- Intermittent flashes R eye x 1 week
- Now lateral visual appears dark



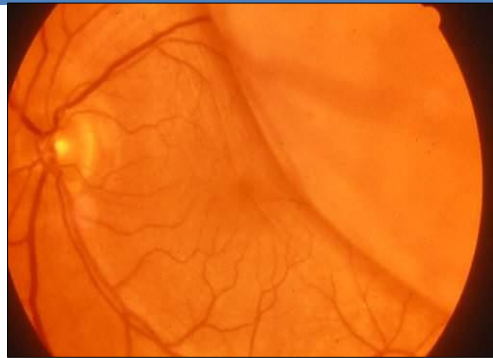
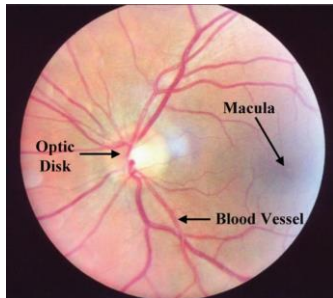
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Our Patient

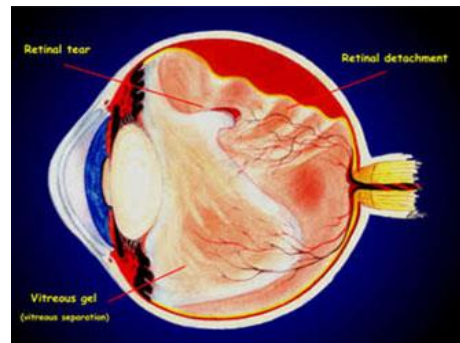
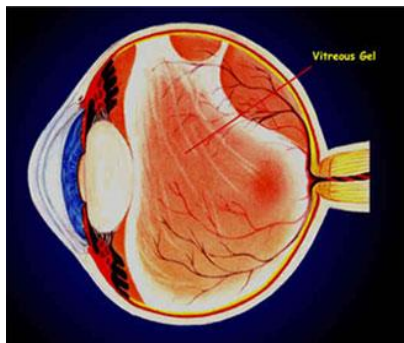
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Retinal Detachment



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Ocular US

- Eye/vitreous is great US medium
- Retinal detachment is shown here



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POSTERIOR VITREOUS DETACHMENT (PVD).

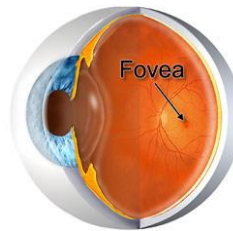
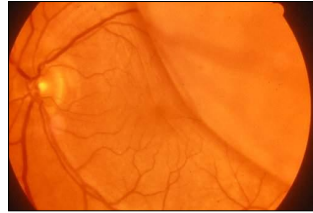


RETINAL DETACHMENT

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Treatment

- Urgent surgical repair
- Emergent if fovea/macula threatened
- Laser to adhere retina and seal tear



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Case 4

- 80 yo male
- Hx DM, HTN, PVD
- Stuttering loss of vision in L eye, now continuous



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Our Patient

- Transient vs Continuous
- Monocular vs Binocular
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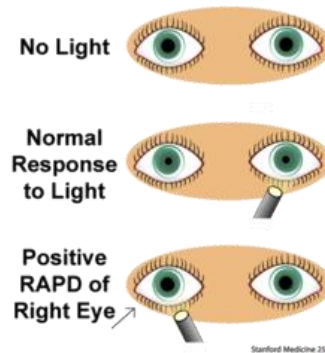
CRAO/CRVO

- Older patients
- DM
- Vascular disease
- Harder to diagnose, because also at risk for CVA
 - Fundoscopy important!
 - Can also look for afferent pupillary defect

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Afferent Pupillary Defect

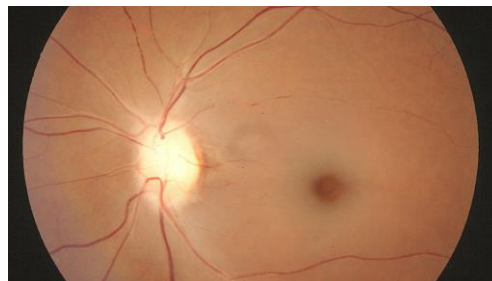
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Central Retinal Artery Occlusion

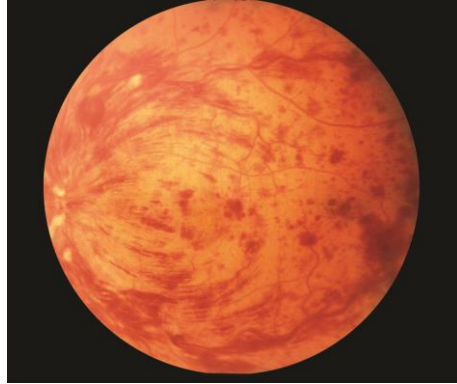
- Artery to retina occluded
- Ischemia to the retina
- Sudden onset monocular vision loss
 - Can be stuttering or continuous
- Fundoscopy- pale retina, cherry red macula (separate blood supply)



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Central Retinal Vein Occlusion

- Veins from retina occluded
- More gradual in onset
- Vascular congestion
- Retinal hemorrhages, tortuous veins



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CRAO/CRVO

- Treatment
 - Consult Ophthalmology/Neurology
 - Ocular massage may dislodge clot in CRAO
 - Worth a try while waiting for specialist
 - Aspirin
 - Intra-arterial TPA
 - Poor evidence for any treatments in ED

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Case 5



- 55 yo female
- Acute onset headache, nausea, blurred vision R eye

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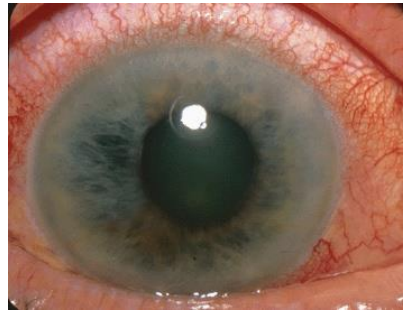
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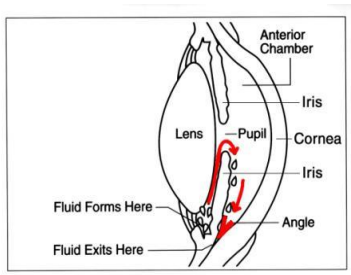
Acute Glaucoma

- Normal IOP 10-20 mmHg
- Treatment needs to be started immediately in ED



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Acute Angle Closure Glaucoma



- Classic
 - Movie theater
 - New B-agonist

↓
Mydriasis

↓
Iris blocks flow of aqueous humor

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Emergent Ophthalmology Consult

- Optic nerve ischemia can result in permanent vision loss
- Initiate multi-drug therapy to lower IOP
- Definitive treatment is iridotomy
 - Laser created passageway for fluid

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Case 6

- 30 yo male
- Blurred vision, tearing, pain R eye
- Injected conjunctiva on exam
- Wears contact lenses



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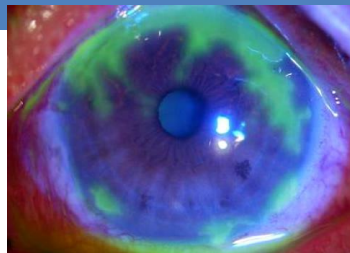
Our Patient

- Transient vs **Continuous**
- **Monocular** vs Binocular
- **Painful** vs Painless
- Partial vs Complete- **BLURRED**
- **Central** vs Peripheral
- **Other Associated Symptoms**

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Keratitis

- Inflammation of the cornea
 - Bacterial
 - Viral
 - Fungal
- Fluorescein stain can help with differential



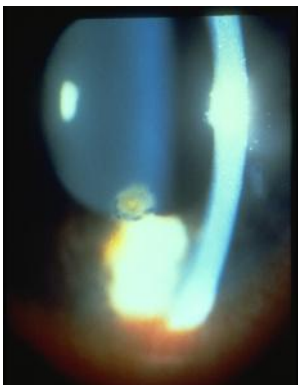
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Keratitis

- Fluorescein is diagnostic
- Tetracaine will improve pain
 - Dendritic- Herpes Simplex/Zoster- viral
 - Diffuse pinpoint- UV keratitis- environmental
 - Milky round lesion- corneal ulcer- bacterial

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Corneal Ulcer



- RF
- DM
- Contact lens use
- Disruption of corneal epithelium
- Fluid enters cornea
- Corneal ulcer appears cloudy/white

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Treatment

- Fluoroquinolone drops
- Ketorolac ophthalmic drops/pain medication
- Keep contacts out
- Daily follow up!
- Complications can lead to scarring, blindness, corneal rupture!



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Case 7

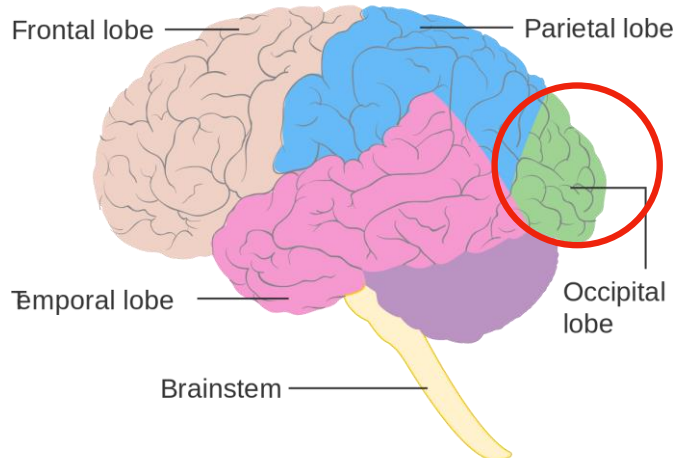
- 82 yo female
- Hx HTN, DM II
- Awoke with painless visual loss
- When you perform neurologic exam you note L-sided homonymous hemianopsia
- Where is the lesion?

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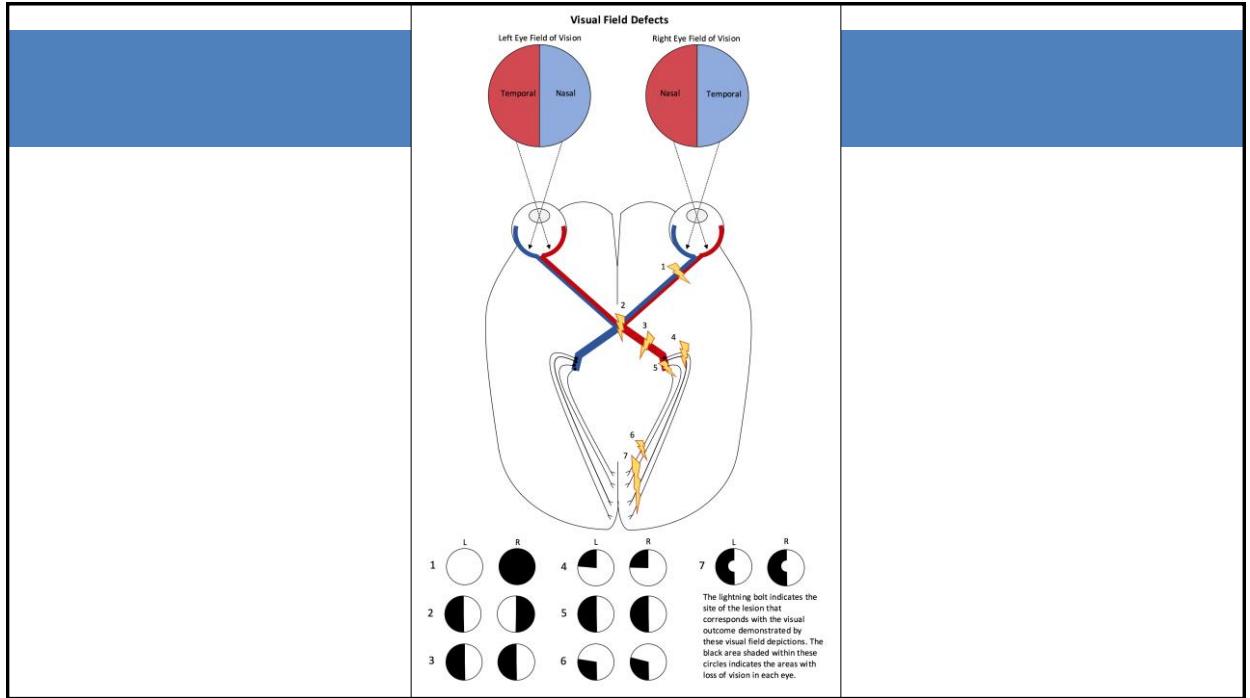
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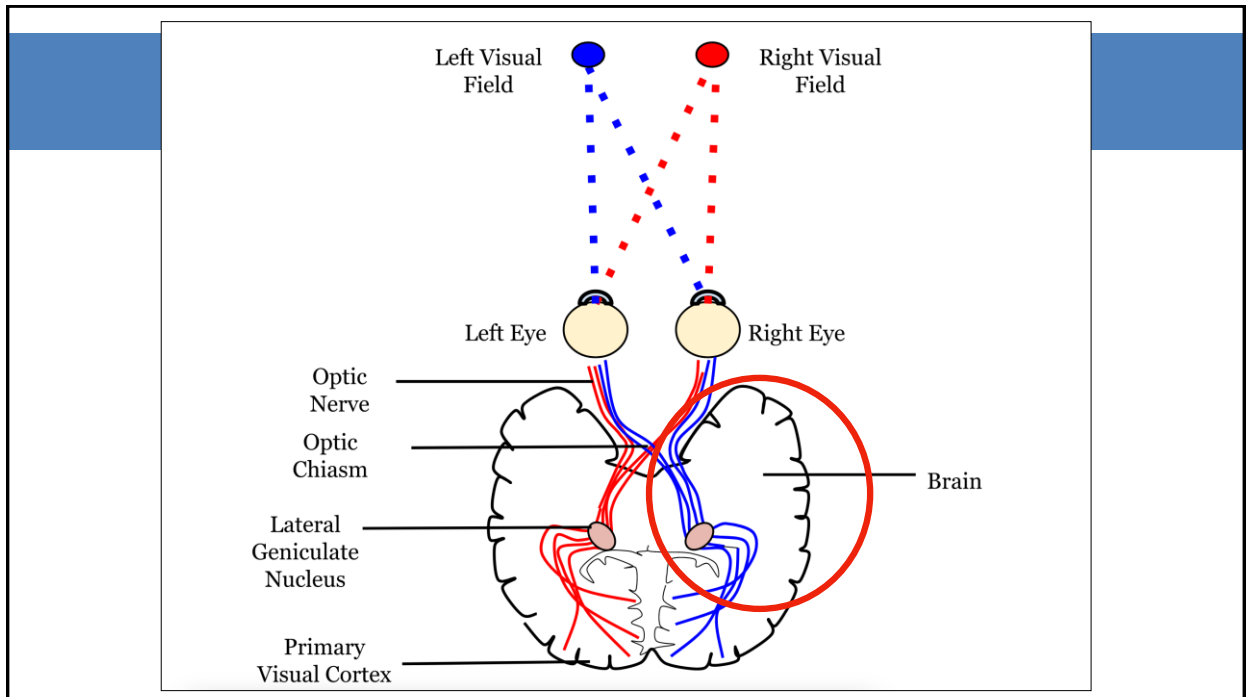
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Psychogenic Blindness/Conversion Disorder

- Diagnosis of exclusion!
- Careful history
- Full ophthalmologic and neurologic exam
- Many vision-threatening diagnoses to exclude!

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Painless Visual Loss

- Retinal detachment
 - Vitreous detachment
 - Vitreous hemorrhage
 - CRAO
 - CRVO
 - Stroke
- Retinal Detachment Continuum**
- Vascular Events**
-

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Painful Visual Loss

- Acute Glaucoma (tonometry)
- Optic Neuritis
- Giant Cell Arteritis (AKA Temporal Arteritis)
- Keratitis (fluorescein)

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What Is the Chance that a Patient Who Presents with Optic Neuritis Will Develop Multiple Sclerosis?

- A. 10%
- B. 33%
- C. 50%
- D. 75%

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Exam Findings in Acute Angle Closure Glaucoma Do NOT Include:

- A. Injected conjunctiva
- B. Sluggish pupil
- C. Peri-orbital edema
- D. Corneal edema

What Type of Ischemic Stroke Can Result in a Homonymous Hemianopsia Pattern of Visual Loss?



- A. Posterior Cerebral Artery
- B. Middle Cerebral Artery
- C. Neither PCA or MCA
- D. Both PCA and MCA