"Help, I Can't See"

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Disclosure

I have no financial interests or relationships to disclose.

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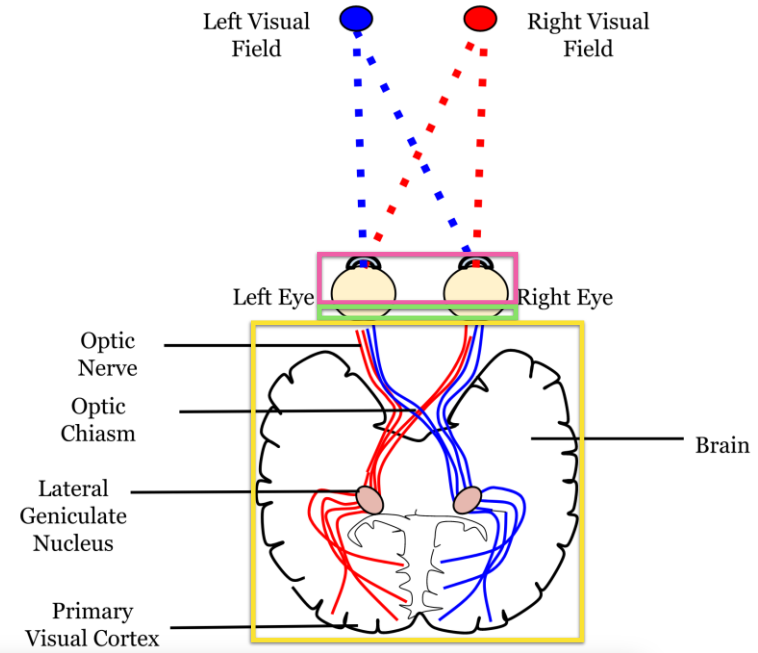

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History

- 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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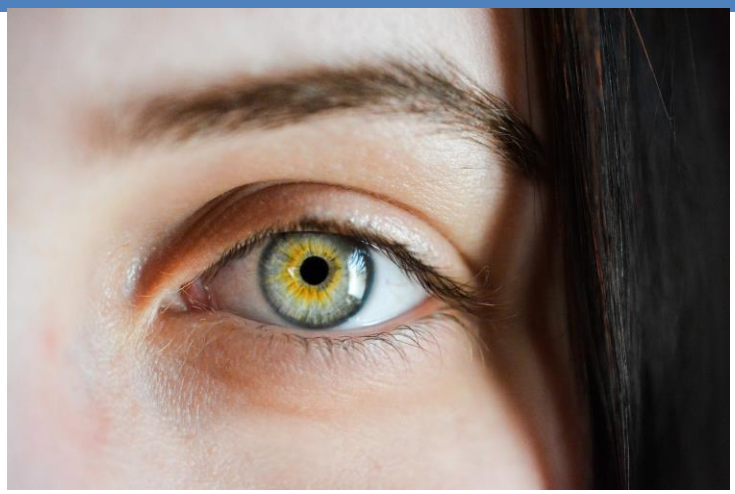
General Inspection



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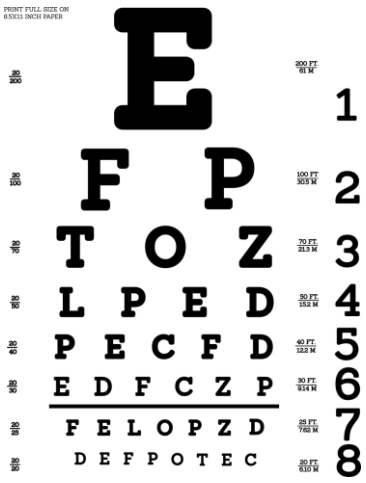
Visual Acuity



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Pupils

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Extraocular Movements

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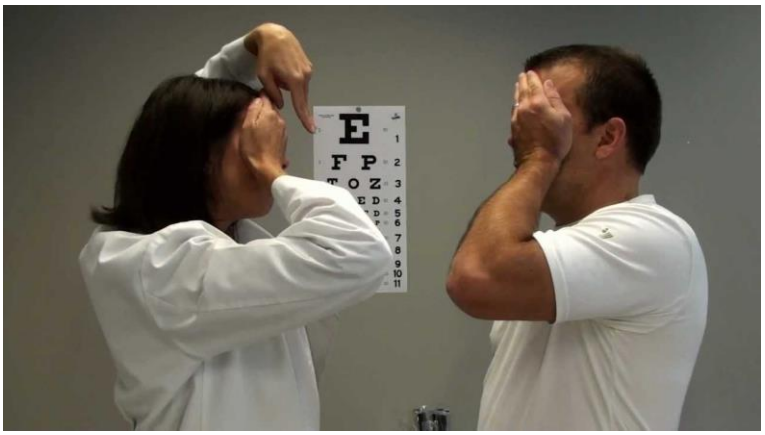
Visual Fields



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Fundoscopy

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Ocular Ultrasound

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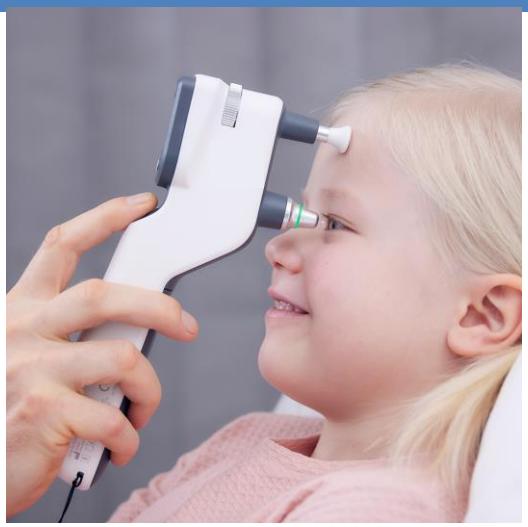
Intraocular Pressure



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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
- Painful vs Painless
- Partial vs Complete
- Central vs Peripheral
- Other Associated Symptoms

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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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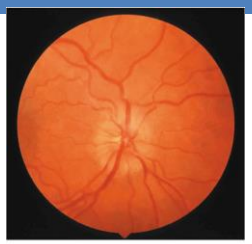
Optic Neuritis- Exam

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



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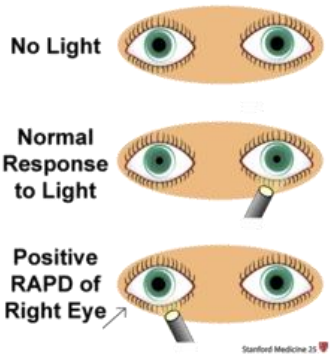
Afferent Pupillary Defect

- 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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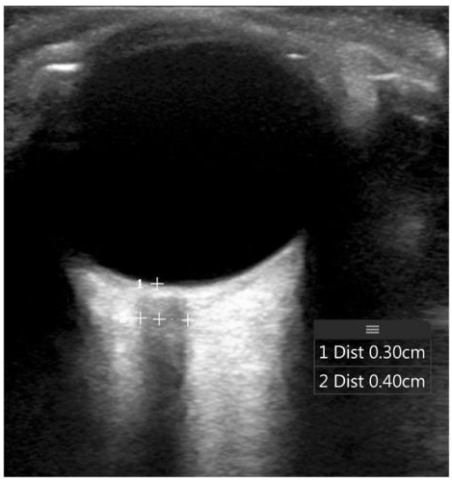

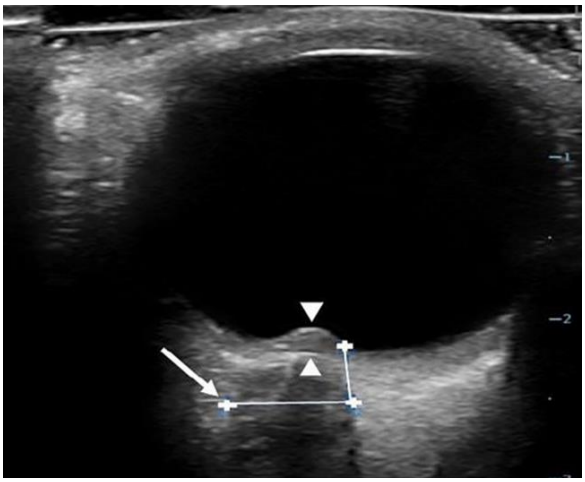

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Optic Neuritis-Treatment

- Steroids
  - IV methylprednisolone
  - Discuss with Ophthalmology and Neurology

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Case 2

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

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Our Patient

- Transient vs Continuous
- Monocular vs Binocular
- Painful vs Painless
- Partial vs Complete
- Central vs Peripheral
- 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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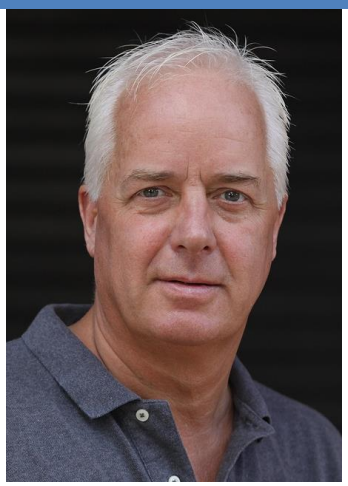
Case 3

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



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Our Patient

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

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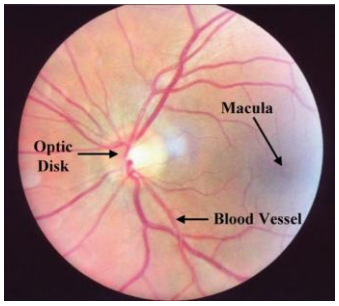
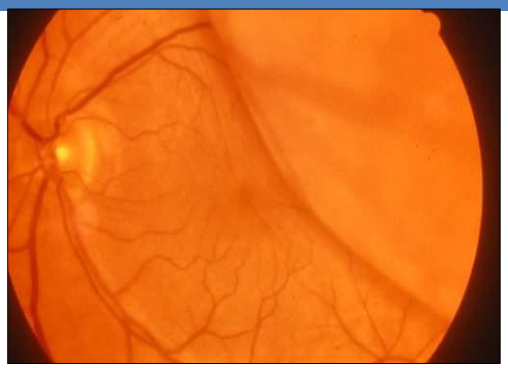
Retinal Detachment





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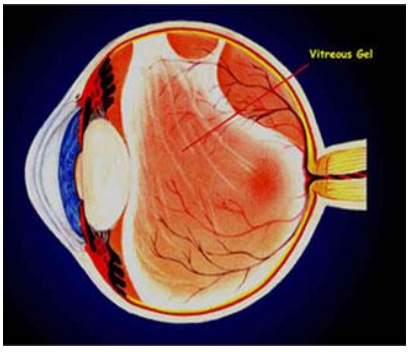

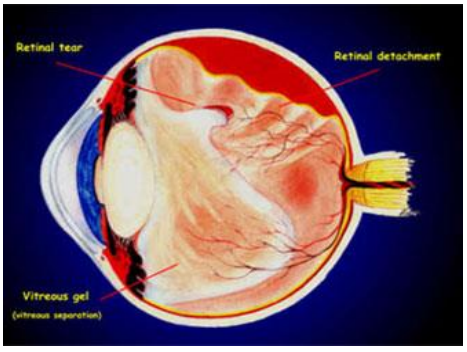

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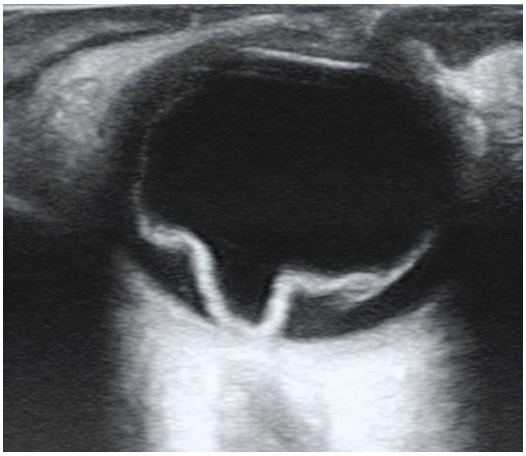
Ocular US

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



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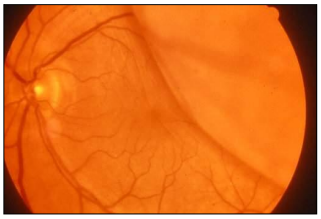
Treatment

- 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
- Painful vs Painless
- Partial vs Complete
- Central vs Peripheral
- Other Associated Symptoms

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CRAO

- 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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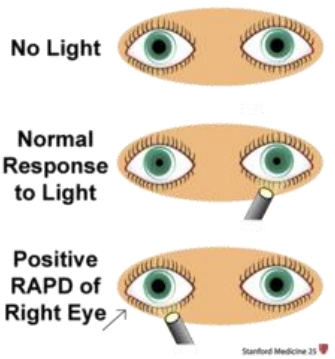
Afferent Pupillary Defect

- 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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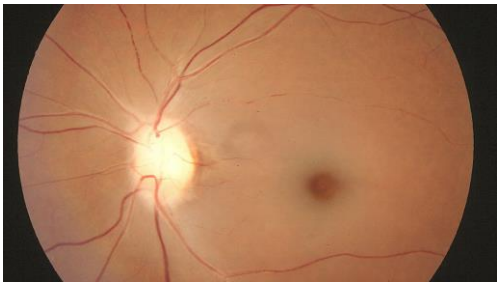
Central Retinal Artery Occlusion

- 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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CRAO

- Treatment
  - Consult Ophthalmology/Neurology
  - Ocular massage may dislodge clot in CRAO- no evidence
    - Worth a try while waiting for specialist
  - Aspirin
  - Intra-arterial TPA/Anterior chamber paracentesis

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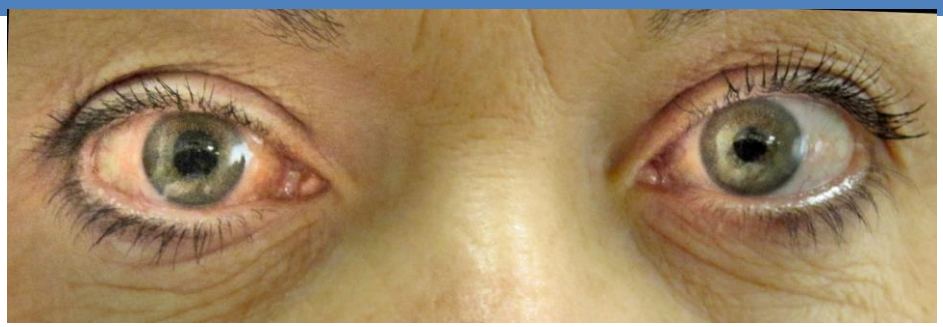
Case 5



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

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Our Patient

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

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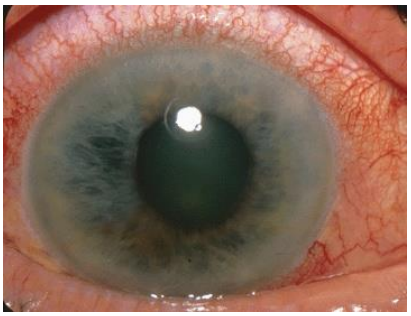
Acute Glaucoma

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



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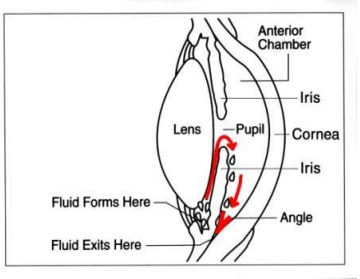
Acute Angle Closure Glaucoma



- Classic
  - Movie theater
  - New B-agonist

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Mydriasis

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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

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

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Our Patient

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

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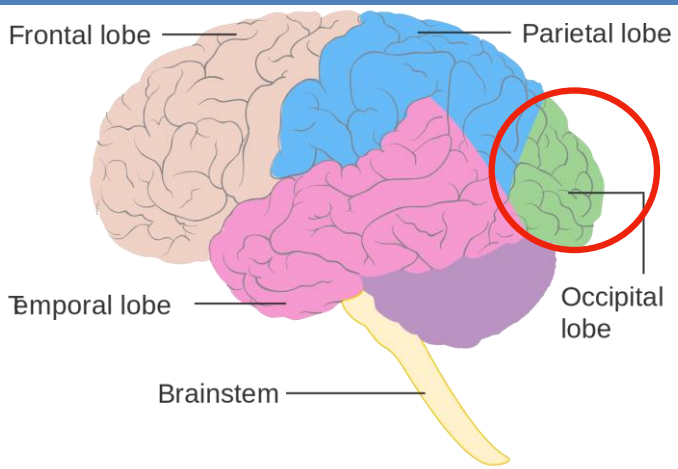

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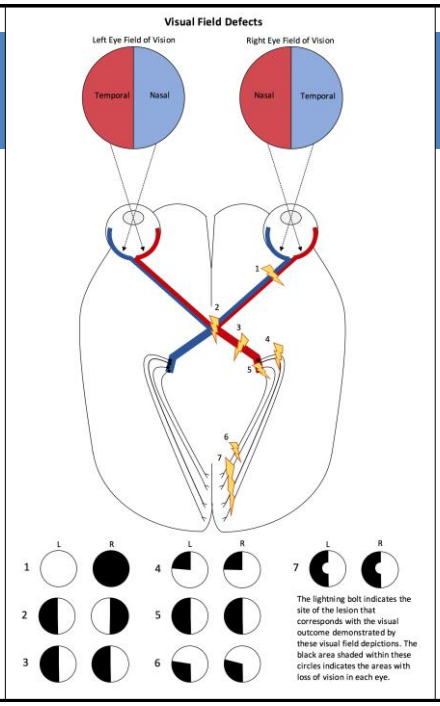
Visual Field Defects
Left Eye Field of Vision
Right Eye Field of Vision
Temporal
Nasal
Nasal
Temporal
1
2
3
4
5
6
7
L
R
The lightning bolt indicates the site of the lesion that corresponds with the visual outcome demonstrated by these visual field depictions. The black area shaded within these circles indicates the areas with loss of vision in each eye.

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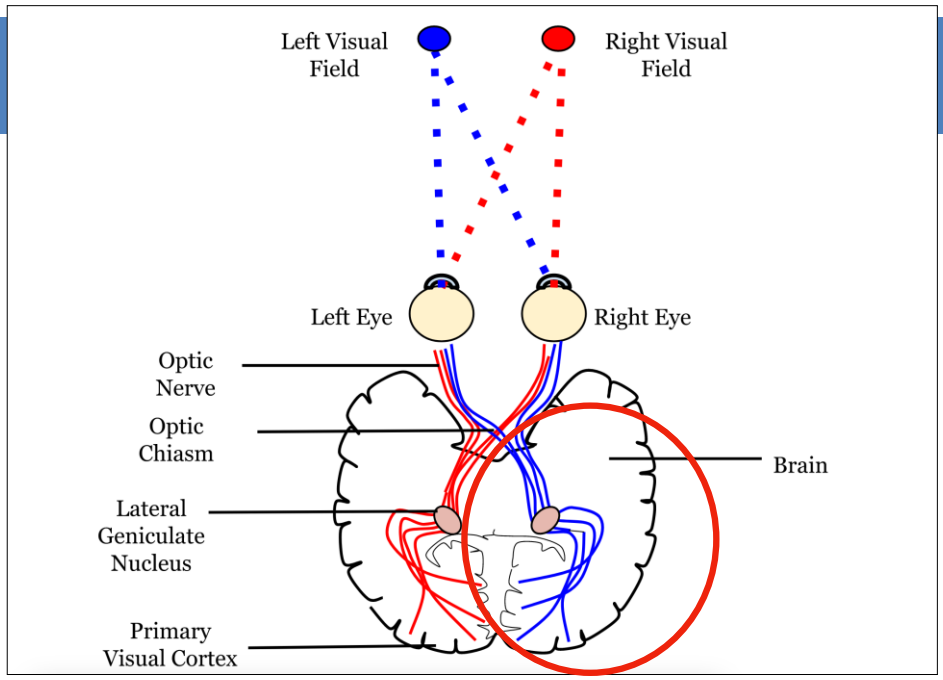
Left Visual Field
Right Visual Field
Left Eye
Right Eye
Optic Nerve
Optic Chiasm
Lateral Geniculate Nucleus
Primary Visual Cortex
Brain

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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

Retinal Detachment Continuum

- CRAO
- Stroke

Vascular Events

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Painful Visual Loss

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

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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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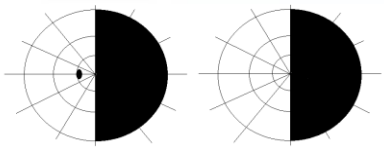
Exam Findings in Acute Angle Closure Glaucoma Do NOT Include:

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