

### Visual anatomy

Visual system is located in the supratentorial compartment

Cells in back of eye that process vision are rods (night vision + Movement) + Cones (day + colour vision)

In the Macular, rods are more prominent

#### Pathway:

Rods/Cones

Bipolar Cells

Ganglion cells

Optic Disc

Optic Nerve

Optic Chiasm - nasal fibres cross over here

Optic Tract

Nasal fibres - Lateral Geniculate Body (LGB)

Superior Colliculus

### Considerations

**Impairment** One/both eyes, total/partial visual loss, whole/partial field loss, precipitating factors? Transient/constant

**Diplopia** Unequal eye placement - Brain receives two displaced images

#### Gaze Disorders

**Hallucinations** Field involved, Formed/Unformed

**Central loss** Macula -  $<5^\circ$  of visual field

**Field loss (peripheral)**  $>5^\circ$  of field

### Monocular Visual Loss

Single Eye lesion before optic chiasm

### Optic Neuritis

#### S&S

Usually a sign of MS, but can occur in isolation

Presents at a young age

7-10 days of eye pain when moving the eye

Loss of vision



### Glaucoma

#### S&S

Sudden Visual Loss, Severe eye and facial pain

Nausea, Vomiting

Dilation

Associated with: Diabetes, high intraocular pressure, Genetic

### Retinal Detachment

#### S&S

Associated with: Myopia, diabetes, intraocular inflammation, surgery/trauma

Brief flashes of light in peripheral vision

Increase in floaters in temporal vision

### Central Retinal Artery occlusion

#### S&S

Sudden Severe visual loss **NO PAIN**

If branch affected, the symptoms will get better. If central artery itself is affected, symptoms will not improve

#### In fundoscopy:

"cherry red" spot in choroid

Posterior pole retinal opacity

Pallor

Optic disc oedema

### Transient visual field loss - binocular/monocular

Ischaemia            Visual symptoms without headache

Migraine            Aura

Increased ICP        Visual Loss when sitting up/standing - findings bilateral optic disc oedema, obstruction of CSF

TIA                    Hemiplegia, Dysarthria, Nausea, Vomiting, Dizziness

### Retrobulbar Neuritis

Inflammatory condition of optic nerve + Retina

Affects central vision (blurring/mistiness)

Pain when moving eye

MS - Present in ~50% of cases



### Tumour on Optic Nerve






Painful

Increased ICP

Affects fibres that convey red - can affect other colours too

Red colour blind - gets worse as increased compression happens

### Visual Loss

Visual Field Defect	Lesion Location
 Decreased vision, right eye	Right optic nerve
 Bitemporal hemianopia	Chiasm
 Right homonymous hemianopia	Left optic tract
 Right homonymous inferior quadrantanopia	Left occipital lobe (upper bank)
 Right homonymous superior quadrantanopia	Left occipital lobe (lower bank)

C

By **Siffi (Siffi)**  
[cheatography.com/siffi/](https://cheatography.com/siffi/)

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