

Visual symptoms

Mechanism: Arise at various levels of the optic pathway: refractive, retina, optic nerve, ocular motor pathways, cortex. The pattern of symptoms localizes the lesion.

Photopsias: flashes before the eyes - with posterior vitreous detachment (often also floaters), retinal tear, migraine, rarely with epilepsy in the visual cortex (mostly colored flashes).

Diplopia: lesions of cranial nerves III/IV/VI, neuromuscular junction (Myasthenia gravis), extraocular muscles (orbitopathy), supranuclear/internuclear lesions. Monocular diplopia = ocular cause (cataract, astigmatism).

Photophobia: trigeminal nociception (migraine, meningitis, uveitis).

Color vision abnormalities: congenital (red-green, X-linked), acquired (retina → blue-yellow; optic nerve/cortex → red-green).

Blurred vision: refraction, cataract, macular/retinal disease, optic neuropathy, cortical/ischemic cause.

Syndromes:

Retinal detachment: acute photopsias ("shower" of new flashes)

Migraine aura: bilateral, colored scintillations 5-30 min, normal visual acuity

Charles Bonnet syndrome: visual hallucinations with vision loss.

Various forms of diplopia.

Red flags:

Sudden shower of photopsias → rupture/detachment of the retina or vitreous.

Examination:

- 1) Assessment of the speed of onset, mono- vs. binocular diplopia, occurrence of pain (headache, with eye movement, behind the eye).
- 2) Examination: visual acuity, pupillary reflex, motility, ptosis, fundus (rupture/detachment), color vision.

Treatment:

- **Retinal detachment:** urgent laser/cryotherapy/surgery.
- **Migraine aura:** standard anti-migraine treatment (triptans).
- **Color vision abnormalities:** treatment of the cause (cataract, medications).

Onset	Children	Adults
Acute	neurological causes (29%), CNS infections, acute ocular pathology	retinal or vitreous detachment (frequent), GCA, migraine aura
Subacute	post-infectious states, systemic causes (18%), refractive errors	macular degeneration, tumor, refractive errors
Chronic	genetic epilepsies with visual aura, congenital color vision defects, tumors	color vision abnormalities, Charles Bonnet sy., macular degeneration