

# Ocular Symptoms and Signs

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**NEGATIVE PHENOMENA** (e.g. blurry vision, gray vision).

## POSITIVE PHENOMENA:

- 1) visual **hallucinations** *see below >>*
- 2) **phosphenes, photopsias** (flashes of light during mechanical / electrical stimulation of visual pathways) - blow to eye, traction on retina (e.g. vitreous detachment), optic nerve compression, optic neuritis, migraine aura.
- 3) **palinopsia** (persistence of visual images) - occipitotemporal lobe damage
- 4) **polyopia** (multiple images)
- 5) **micropsia** (shrunken images), **macropsia** (enlarged images) – seizures, macular edema.
- 6) **metamorphopsia** (distortion of shape) - macular edema.
- 7) **Alice-in-Wonderland syndrome** (distortion of bodily image).

- all of these may occur during migraine aura!

N.B. level of visual image complexity does not specify localization!?

## VISUAL HALLUCINATIONS

- *visual images that patient claims to see but that other observers do not.*

- a) **unformed** hallucinations (e.g. dots, flashes, zig-zags) – from **retina ÷ occipital lobes**.
- b) **formed** hallucinations (actual objects or people) – **temporal** lobe origin, bilateral destruction of medial **substantia nigra** pars reticulata (*peduncular hallucinations*), **psychotic** psychiatric illnesses.

## ETIOLOGY

- 1) damage to afferent visual pathways (**CHARLES BONNET syndrome** - hallucinations within defective field)
  - 2) sensory deprivation (e.g. in war prisoners)
  - 3) migraine (aura)
  - 4) seizures (occipital lobe, temporal lobe)
  - 5) brain stem lesions
  - 6) drugs (cocaine, LSD, marijuana, digoxin, anticholinergics, dopaminergics)
  - 7) psychotic psychiatric illnesses
  - 8) neurodegenerative dementias
  - 9) hypnopompic & hypnagogic hallucinations in normal people
- **mechanism** - visual phenomena released by lack of inhibitory input.

## FLOATERS

- *small dark spots* in visual field.

- each floater is **shadow of mobile\* vitreous opacity** cast on retina.  
\*seem to move slowly when eye is still;
- frequent adult complaint!
- most noticeable against white homogeneous background.
- maintain relative position in visual field with eye movement.
- **etiology**:
  - 1) **syneresis** (degeneration of vitreous humor with loss of gel consistency to become fluid).
  - 2) **posterior vitreous detachment**.
  - 3) minute **vitreous hemorrhage** or **vitritis**.

**WEISS ring** (ring-shaped floater) - remnant of hyaloid that was attached to optic disc edges.  
**Cobwebs** - condensation of collagen fibers.  
**Small spots** - fresh blood due to rupture of retinal vessel during acute posterior vitreous detachment.
- floaters warrant meticulous examination (entire retina & media after dilation) by **indirect ophthalmoscopy** (vitreous floaters are seen with high plus lens by looking into red reflex at 15-30 cm distance).

N.B. **retinal detachment** may be preceded by sudden shower of floaters (due to blood in vitreous)!

## HALOS

- *diffractive phenomenon seen around light sources.*

**Etiology**:

- 1) **hazy ocular media** – cataract, corneal edema (e.g. in acute glaucoma)
- 2) **migraine** (jagged halos that change shape)

## PHOTOPHOBIA

- *abnormal visual intolerance to light.*

- common in lightly pigmented persons.
- important (but nondiagnostic) symptom in **keratitis, corneal abrasions & erosions, uveitis, acute glaucoma**.
- may be relieved by **wearing dark glasses**.

## PAIN

**Foreign-body sensation** - due to irritation / trauma of **corneal / conjunctival epithelium**.

**Ocular ache** (deep, dull ache in or behind eye) - due to **intraocular / orbital disease**.

- **sinusitis** occasionally causes referred eye pain.

## SCOTOMAS

**NEGATIVE SCOTOMA** - **blind spot** in vision field.

- frequently not noticed by patient (unless involves central vision).
- **etiology** - **retinal** hemorrhage / edema / detachment, **optic nerve** dysfunction, lesion in **optic pathways**.

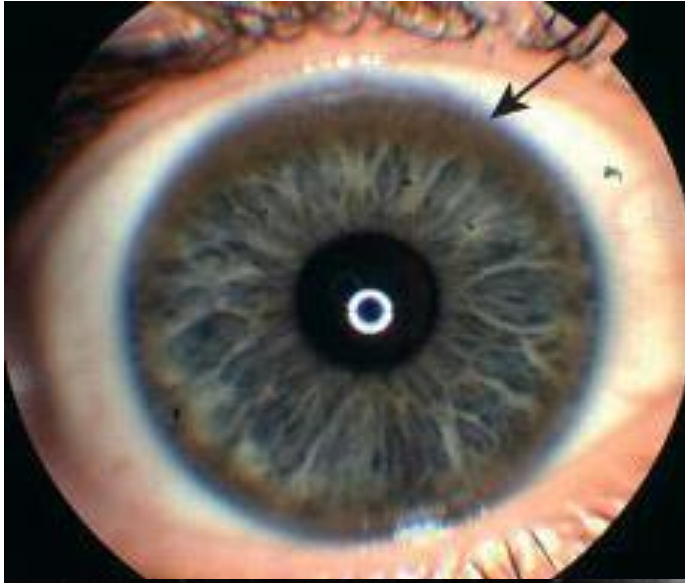
**POSITIVE SCOTOMA** - light spot in vision field.

- represents abnormal stimulation of visual system (e.g. migraine).

### IRIS SIGNS

**ANIRIDIA** - rare congenital anomaly; associated with Wilms tumor!

**KAYSER-FLEISCHER RING** - in Wilson's disease:



BIBLIOGRAPHY for ch. "Ophthalmology" → follow this [LINK >>](#)