Ocular Symptoms and Signs

Last updated: March 15, 2026

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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 **vitreitis**.

  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***.

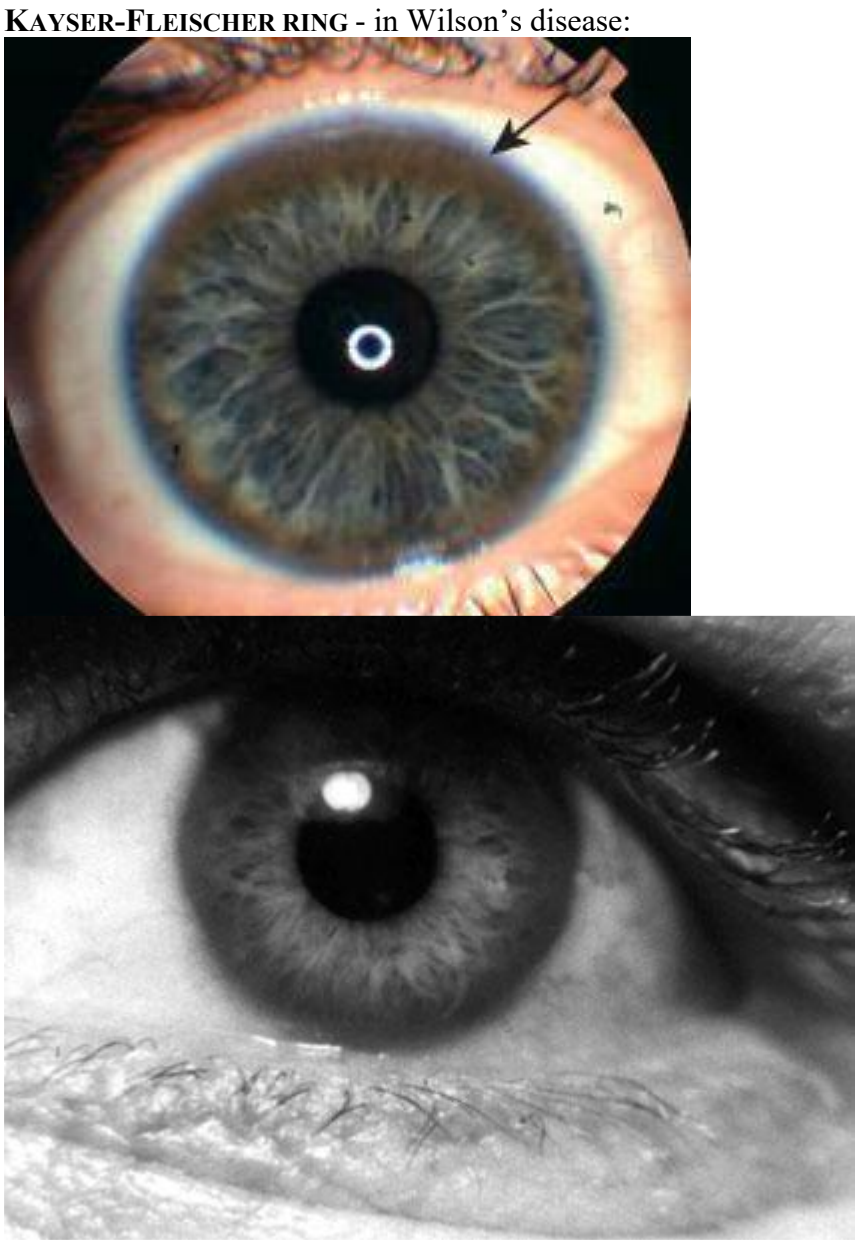
POSITIVE SCOTOMA - **light spot** in vision field.

- 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 >>