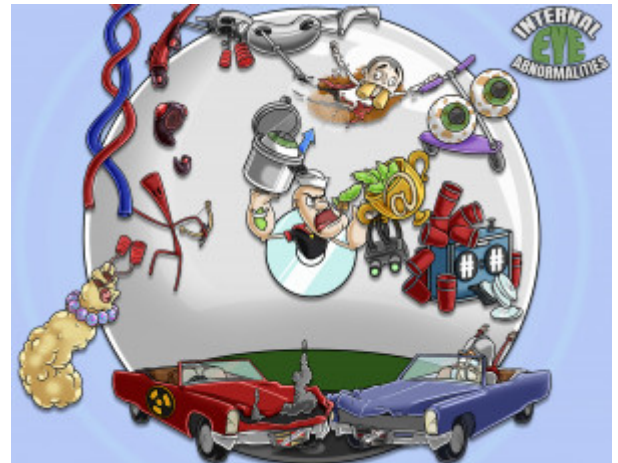


Internal Eye Abnormalities

Abnormalities of the internal eye can affect vision, like those conditions leading to visual field loss, including macular degeneration, scotomas, increased ocular pressure, retinal detachment, and optic tract lesions. Lens opacities also affect the internal eye and include nuclear and cortical cataracts. Another group of conditions includes optic disc abnormalities: optic atrophy, papilledema, and excessive cup-disc ratio. Finally, the retina can have vascular abnormalities present, like arteriovenous crossing, attenuated arteries, and diabetic retinopathy.



PLAY PICMONIC

Lens Opacities

Nuclear Cataract

[Nuclear-symbol Cadillac-cataracts](#)

Via the ophthalmoscope, a nuclear cataract appears as an opaque gray surrounded by a black background with a consolidation of gray toward the center of the lens. Development of the cataract begins after the age of 40, with slow progression toward possible vision loss.

Cortical Cataract

[Cortez Cadillac-cataracts](#)

A cortical cataract is asymmetric with radial, white spokes (like the wheel of a bicycle) on a black center. Etiology begins in the periphery of the lens (the outer cortex) and can progress faster than a nuclear cataract.

Optic Disc Abnormalities

Papilledema

[Popeye-edamame](#)

Associated with increased intracranial pressure, papilledema presents as erythema, congestion, and elevation of the optic disc with blurred margins seen on an ophthalmoscope. Increased venous stasis to the globe from increased intracranial pressure can create retinal hemorrhage and/or absent venous pulsations upon inspection. Visual acuity is not typically affected.

Optic Atrophy

[Optic @-trophy](#)

Presenting as a white or gray color of the optic disc, optic atrophy is a partial or complete loss of the optic nerve resulting in decreased visual acuity, color vision, and/or contrast sensitivity.

Excessive Cup-Disc Ratio

[Excessive Cup-Disc Ratio-radio](#)

Increased ocular pressures from disease processes such as primary open-angle glaucoma result in decreased blood supply to retinal structures. Further, the optic cup enlarges to more than half the diameter of the encompassing disc, with notable blood vessels on the periphery of the cup. Patients can present asymptomatic or have decreased vision or visual field defects in uncontrolled glaucoma.

Visual Field Loss

Macular Degeneration

[Mac-Dracula Degenerating](#)

Macular degeneration can lead to central vision loss and is related to age-related damage to the macula. There are two types of macular degeneration: the common "dry" type, where the macula thins with age, and the less common "wet" type, a later occurring type leading to faster vision loss and neo-proliferation of blood vessels on the back of the eye, damaging the macula.

Scotomas

Scotomas-scooter

Scotomas are localized areas of damage on the retina leading to "blind spots" in the patient's vision with variable direction and size. They can affect one or both eyes, dependent upon illness or injury.

Increased Ocular Pressure

Up-arrow Eye Pressure-cooker

Often associated with a pathological process such as glaucoma, increased ocular pressure can decrease peripheral vision. It often starts with a paracentral scotoma affecting central and/or peripheral vision. See our [playlist](https://www.picmonic.com/share/track/glaucoma_39098?ref=H4BJH667DY02LBL23) for more information.

Retinal Detachment

Detached Red-tin-man

Retinal detachment leads to a shadow or diminished vision in one quadrant to one-half of the visual field. A milder or early presentation could be the presence of floaters (small dark spots or squiggly lines) and/or flashes of light in the visual field. A dilated eye exam is indicated for comprehensive assessment, and its presence is a medical emergency.

Optic Tract Lesions

Eye Tract Leaches

Vision loss is associated with lesions of the eye and eye innervation at various locations and affects different visual functions. Lesions of the optic nerve or globe can lead to complete blindness of the affected eye. A lesion at the optic chiasm leading to injury of crossing fibers results in bitemporal hemianopia. A lesion of the right optic tract can lead to loss of vision in the same visual field of both eyes, a term known as homonymous hemianopia.

Vascular Abnormalities of the Retina

Arteriovenous Crossing

Arteries and Veins Crossing

Arteriovenous crossing, also known as nicking, presents with dilation of veins distal to an area of arteriovenous crossing seen on an ophthalmoscopic exam. Uncontrolled hypertension can result in arteriovenous crossing as the arteriole wall thickens and presses against the nearby vessels.

Attenuated Arteries

A-thin Artery-archer

Attenuated arteries are a narrowing of the arteries associated with disease processes such as chronic uncontrolled hypertension. Proximal occlusion of arteries and increased pressure results in thready arterioles observed on ophthalmoscopy.

Diabetic Retinopathy

Dyed-bead-pancreas and Red-tin-eyes

Categorized as nonproliferative, or changes occurring within the retina, and proliferative, with neovascular (new blood vessel formation) changes occurring on the surface of the retina. Patients with nonproliferative diabetic retinopathy can present with microaneurysms (small, diffuse red dots) and/or lipid exudates (yellow-white spots with distinct edges in a circular or linear pattern) anywhere on the retinal wall. Patients presenting with proliferative changes may have a similar presentation with the addition of neovascularization appearing like radiating spokes from existing blood vessels.