

Fig. 3-1. Anatomy of the afferent visual system and the associated visual field defects. 1, Central scotoma from optic neuropathy. 2, Unilateral blindness due to optic nerve transection. 3, Bitemporal hemianopia from optic chiasmal lesion, may or may not be macular splitting (*left lower inset*): A, Lesion anterior to chiasm—more prominent defect in bitemporal upper quadrants early on and eventually evolving to full bitemporal field defect; B, lesion posterior to chiasm; more prominent defect in bitemporal lower quadrants early on and eventually evolving to full bitemporal field defect. 4, Anterior chiasm or junctional syndrome (*left lower inset*): ipsilateral optic nerve defect and contralateral superior temporal field defect due to posterior optic nerve lesion involving the ipsilateral optic nerve and contralateral crossing fibers of Wilbrand's knee (contralateral lower nasal fibers representing upper temporal field) (also see Fig. 3-9); this is to be differentiated from junctional syndrome of Traquair. 5, Unilateral nasal field defect due to ipsilateral lateral optic nerve lesion. 6, Macular-splitting homonymous hemianopia from complete optic tract lesion (normal visual acuity). 7, Complete (gray and black) homonymous hemianopia and incomplete (black only or gray only) field defects due to lateral geniculate body lesions (complete and incomplete lesions, respectively): A, gray only (quadruple sectoranopia)—anterior choroidal artery territory lesion; B, black only (horizontal homonymous sector defect)—wedge-shaped homonymous defect, posterior lateral choroidal artery territory lesion (may also occur with lesion involving the central bundle of the optic radiation or calcarine fissure). 8, Right superior homonymous quadrantopia (“pie in the sky”) deficits from left temporal lesion affecting underlying optic radiations (lower bundle, called Meyer's loop as fibers pass lateral to temporal horn of lateral ventricle). 9, Right inferior homonymous quadrantic (“pie on the floor”) deficits from left parietal lesion affecting the underlying optic radiations (upper bundle). 10, Macular-splitting homonymous hemianopia from lesion affecting both superior and inferior optic radiations (usually large hemispheric insults). 11, Temporal crescent (half-moon) syndrome due to lesion at anterior tip of striate cortex. 12, Macular-sparing homonymous hemianopia due to lesion involving entire medial occipital lobe, sparing the anterior tip (representing contralateral temporal crescent). 13, Partial homonymous hemianopia (macular-sparing) affecting the most posterior portion of medial occipital lobe, sparing posterior poles (macular representation). 14, Macular-splitting homonymous field defect limited to macular distribution and no involvement of peripheral visual fields (could be due to lesion of unilateral posterior occipital pole). Right lower inset: 1-6, layers of lateral geniculate nucleus.

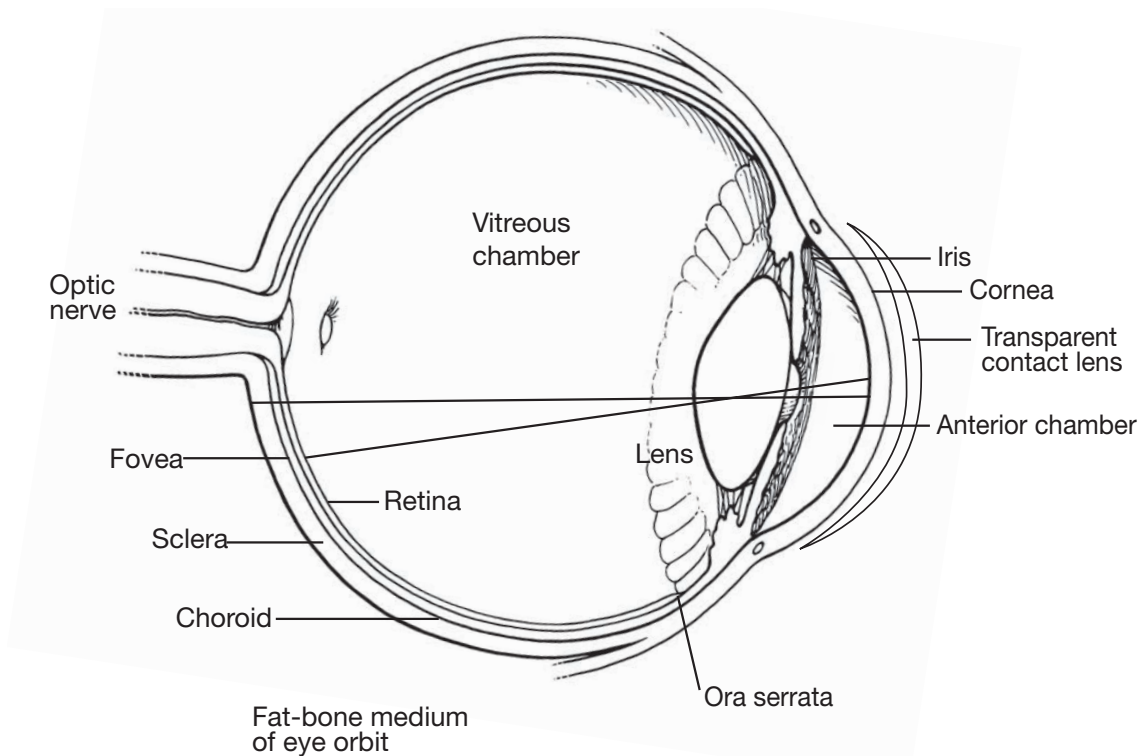


Fig. 3-2. Gross anatomy of the eye and retina.