

# The Structure and Histology of the Eye

ARVO 2024

**Neeraj Agarwal, PhD**

Program Director of Research Training and  
Workforce Development, NEI



National Eye Institute  
Research Today...Vision Tomorrow

# Purpose

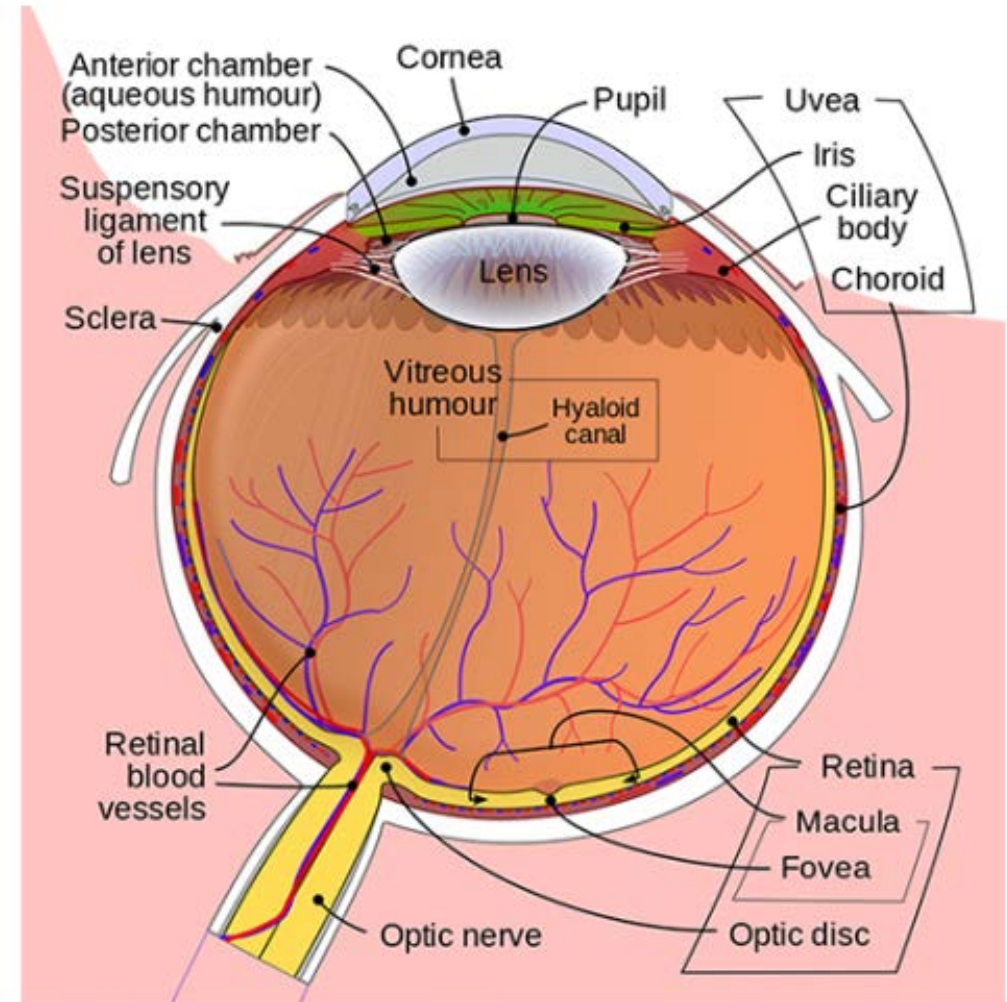
---

**The goal of this presentation is to familiarize you with the structure and histology of the eye with a hope that you all grow up to be the best vision scientists and ophthalmologists.**

# The Eye

- The eye is made up of three coats, which enclose the optically clear aqueous humor, lens, and vitreous body
- The outermost coat consists of the cornea and the sclera
- The middle coat contains the main blood supply to the eye and consists, from the back forward, of the choroid, the ciliary body, and the iris.

## Anatomy of the Eye

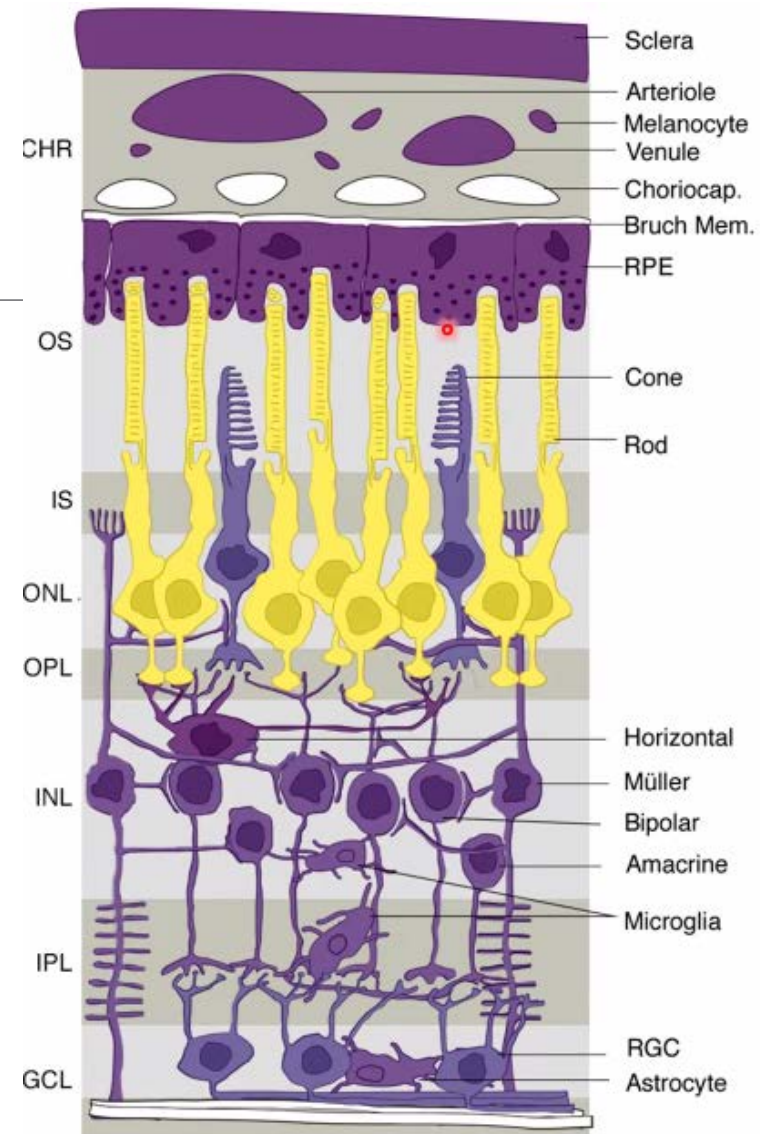
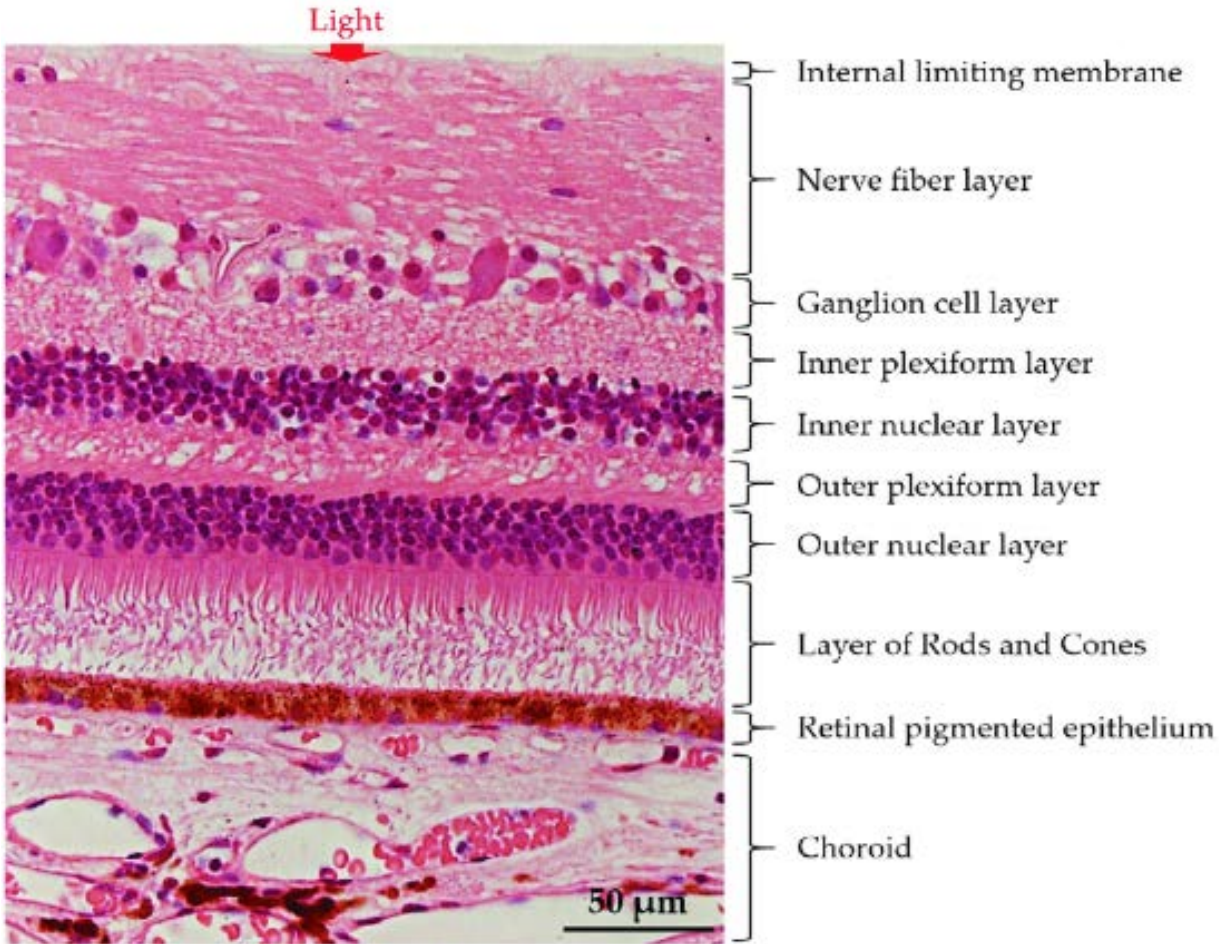


# Cornea, Iris/Pupil, and Lens

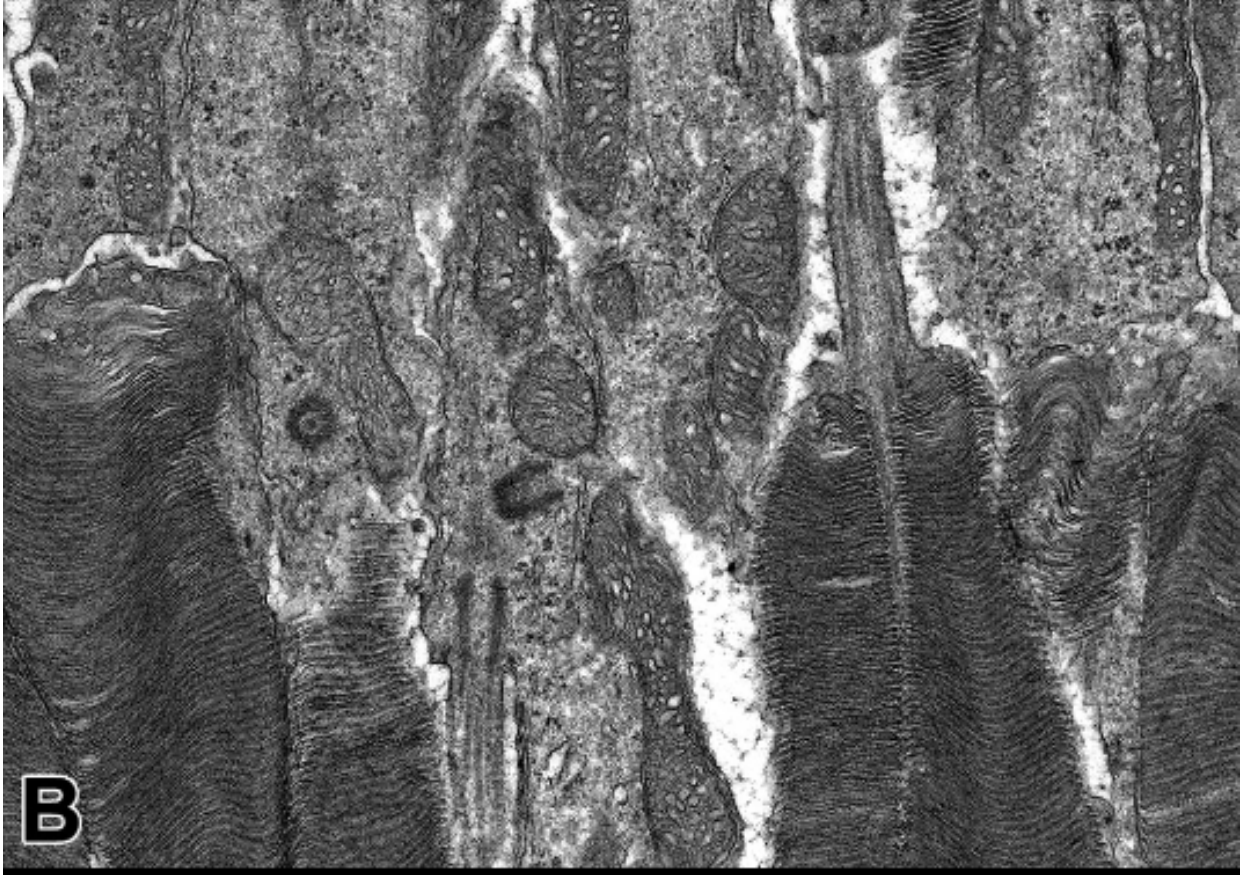
---

- **Cornea:** The clear front window of the eye which transmits and focuses (i.e., sharpness or clarity) light into the eye. Corrective laser surgery reshapes the cornea, changing the focus.
- **Iris/Pupil:** The colored part of the eye which helps regulate the amount of light entering the eye. When there is bright light, the iris closes the pupil to let in less light. And when there is low light, the iris opens up the pupil to let in more light.
- **Lens:** Focuses light rays onto the retina. The lens is transparent, and can be replaced if necessary. Our lens deteriorates as we age, resulting in the need for reading glasses. Intraocular lenses are used to replace lenses clouded by cataracts.

# Retina Histology



# EM of the Retina showing Photoreceptor Discs



# Thank You

---

**Neeraj Agarwal, PhD**

**[agarwalnee@nei.nih.gov](mailto:agarwalnee@nei.nih.gov)**

**Thanks to Google for the images and some text.**