

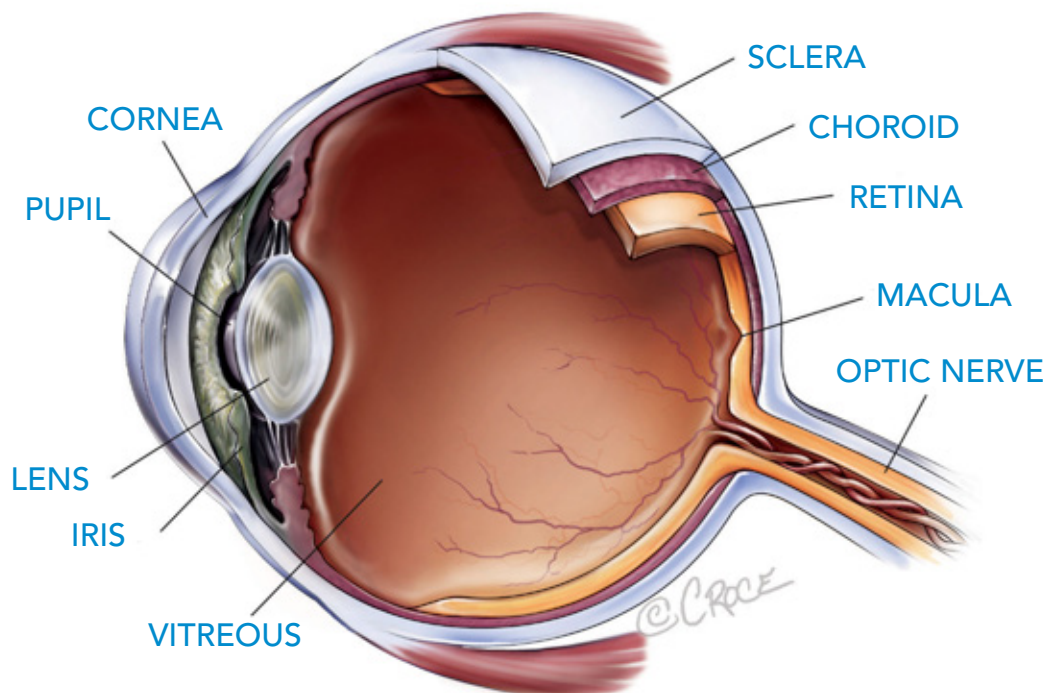


Healthy Vision and Impaired Vision

In a healthy human eye, reflected light is focused through the cornea, pupil, crystalline lens and vitreous humour, onto the retina, which converts the light into electrical impulses, and sends them along the optic nerve to the brain, where they are decoded by the visual cortex into sight.

The area at the centre of the retina is the macula, where fine visual detail is captured, at the centre of which lies an area, smaller again, called the fovea, which captures the very finest visual detail.

If any of the eye's light-collection, capture and processing components are damaged or missing, through injury or illness, vision is impaired.

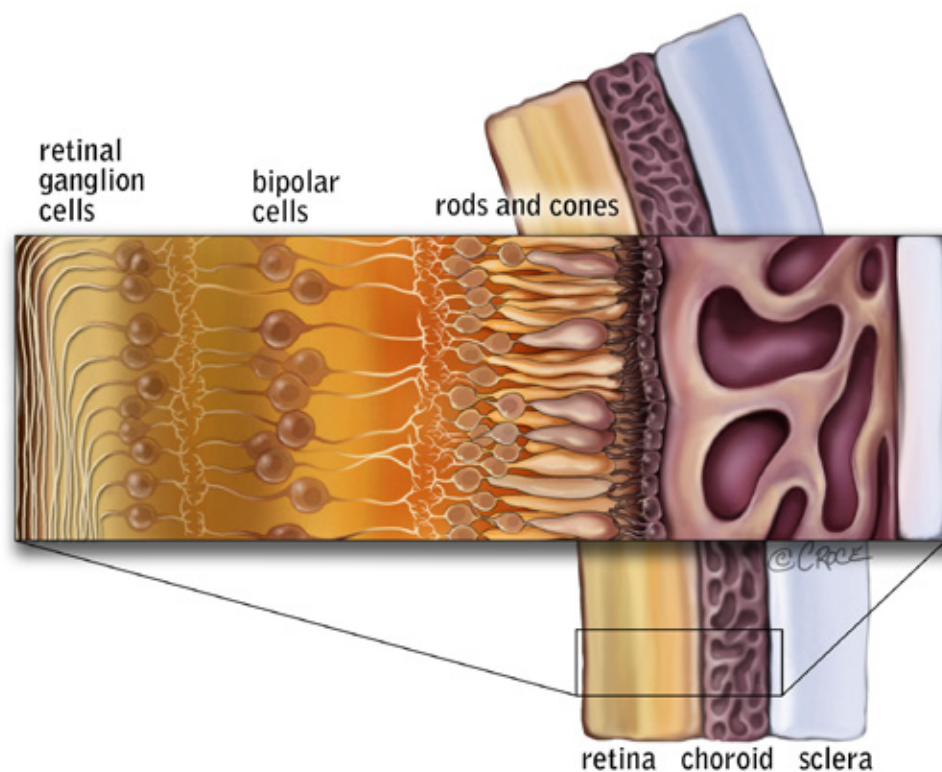


Healthy Vision and Impaired Vision

What is retinitis pigmentosa?

Retinitis pigmentosa refers to inherited eye disorders involving gradual damage to and loss of photoreceptor cells in the retina. This causes a gradual degeneration of sight, particularly of peripheral vision, often resulting in tunnel vision.

Damaged photoreceptor cells (the rods and cones) leave the retina unable to process and transmit visual information. With a prevalence of one in 4000 people and affecting 1.5 million people in the western world, retinitis pigmentosa is the predominant cause of inherited blindness. In parts of India and China the prevalence rises to one in 400 people.



Who could use a bionic eye?

The bionic eye requires patients to have a developed visual cortex, intact optical nerve, and some intact retinal cells. To benefit from this technology, patients must have had vision in the past.

Bionic Vision Technologies is developing retinal prostheses for patients with advanced stages of retinitis pigmentosa.