

Vision and Retinitis Pigmentosa

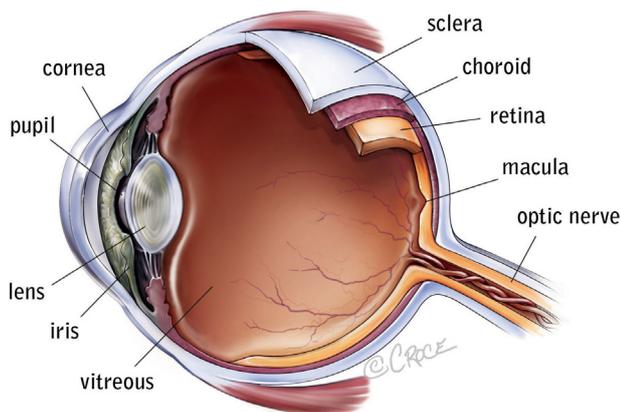


BIONIC VISION
TECHNOLOGIES

In a healthy human eye, the cornea and lens focus light onto the retina, which converts the light into electrical impulses and sends them via the optic nerve to the brain. The visual cortex in the brain decodes these signals into sight.

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

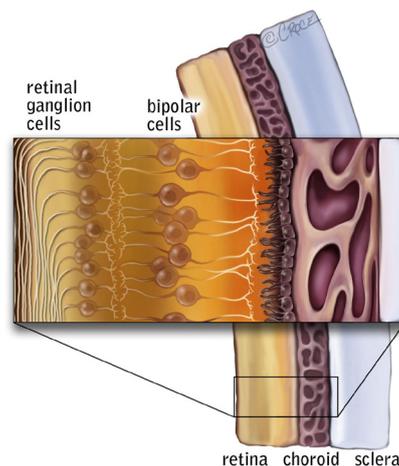
If any of the components of the eye that capture and process light are damaged or missing, through injury or illness, vision is impaired.



What is Retinitis Pigmentosa?

Retinitis Pigmentosa refers to inherited eye disorders involving gradual loss of photoreceptor cells in the retina. This causes a gradual degeneration of sight, particularly of peripheral vision, resulting in tunnel vision and eventually complete blindness in some people.

Damaged photoreceptor cells (rods and cones) leave the retina unable to process and transmit visual information. With a prevalence of one in 4000 people, Retinitis Pigmentosa affects approximately 1.5 million people in the western world and is the predominant cause of inherited blindness¹.



Who will benefit from a Bionic Eye?

Bionic Vision Technologies Pty Ltd is developing retinal prostheses for patients with advanced stages of Retinitis Pigmentosa.

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

The technology relies on the brain plasticity of the user. The more a patient uses his or her bionic eye, the better their experience in interpreting the stimulation pattern will become. Over time, the brain adapts to the stimuli and the sense of vision improves.

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¹Bunker et al (1984) AM J Ophthalmol 97: 357-365