Retinal prostheses are designed to restore a basic sense of sight to people with profound vision loss.Devices in these positions may benefit from the geometric representation of the world at the retinal level and from residual retinal processing, although this is still to be proven conclusively.These devices, known as vision prostheses, can be implanted anywhere along the visual pathway; retina, optic nerve, lateral geniculate nucleus or visual cortex (Fig.This review encompasses the work of over 40 individual research groups who have built devices, developed stimulation strategies, or investigated the basic physiology underpinning retinal prostheses.They require a relatively intact posterior visual pathway (optic nerve, lateral geniculate nucleus and visual cortex).Whilst there are advantages and disadvantages of all locations, many devices to date have been implanted in or near the retina, or within the confines of the ocular globe.Retinal implants are options for people with severe stages of retinal degenerative disease such as retinitis pigmentosa and age-related macular degeneration.Devices generally provide an improved ability to localize high-contrast objects, navigate, and perform basic orientation tasks.Current challenges include how to improve visual acuity, enlarge the field-of-view, and reduce a complex visual scene to its most salient components through image processing.Keywords: Retinal prosthesis, Vision restoration, Retinal disease, Ophthalmology

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