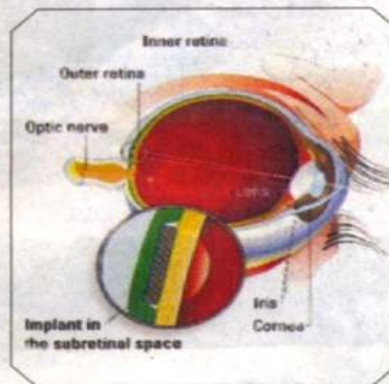


Chip in the eye

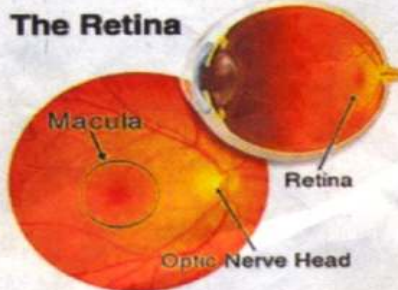
There is light at the end of the tunnel, as those suffering from retinal degeneration can now see again thanks to artificial retina prosthesis

Age related macular degeneration (ARMD) is one of the leading causes of visual impairment in individuals, more than 50 years of age, in developed countries. ARMD is a disease associated with aging that gradually destroys sharp, central vision. Causing no pain, AMD advances so slowly that people notice little change in their vision. In others, the disease progresses faster and may lead to a loss of vision in both eyes. ARMD is second only to cataract as the cause of severe visual loss.

Retina is the light sensitive layer lining the inside of eye. It receives images of objects and transmits them to the brain via the optic nerves. The macula is a very small central part of retina, which is responsible for sharp central vision. All the fine details, such as recognising a face, reading, watching television, appreciation of colours etc.



layer of the retina and act as artificial retina. The retinal prosthesis will serve as a neural interface — a man-made machine connection that conveys data from a camera or computer to the central nervous system.



are functions of macula. It provides us with central vision when the macula becomes damaged, extreme and dramatic vision loss can occur.

No effective prevention or cure is known for this disease.

Patients with retinal degenerations have lost the function of their photoreceptors permanently. These cells convert light into electrochemical signals that are transmitted to the brain and processed as visual images. Thus, these patients could benefit from a device that conveys visual information to the remaining functional portions of the retina such as the bipolar cells or retinal ganglion cells.

Researchers around the world are trying to develop a silicon microchip, which will replace the photoreceptor

EXPECTED OUTCOME OF THE IMPLANT

- Moving without support
- Able to cross roads without being prone to accidents
- Identifying static and moving objects, living and non living
- Able to read headlines of newspaper

DR S NATARAJAN
EXECUTIVE CHAIRMAN AND
MANAGING DIRECTOR
ADITYA JYOT EYE HOSPITAL PVT. LTD.

Symptoms

If only one eye is affected to begin with, the symptoms are not noticeable in early stages. Gradually as disease progresses or if both eyes are involved, reading or close work may become difficult. There can be distortions in objects which are looked at directly, for e.g. bulges or curved appearance of a straight door, distorted print lines in book, a dark or blank spot in the centre of vision, or fading of colours especially blue.

Detection

As initially it is a silent disease, mostly it is picked up in a routine examination by an ophthalmologist. The retinal examination done by an ophthalmoscope will show the findings of this disease process.