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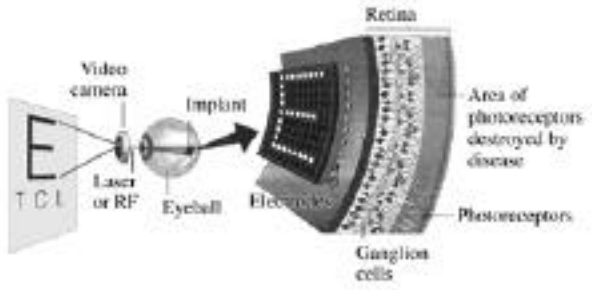
More than 10 million people around the world suffer from 2 very distinct retinal diseases. Retinitis pigmentosa and age related macular degeneration. Both diseases deteriorate retinal tissue leading to blindness. It wasn't until 1988 that Dr. Mark Humayun discovered that a blind person could be made to see light if their ganglia nerve (which is located behind the retina) was stimulated with an electric current. This meant that the nerves behind the retina still worked. This important discovery has led to many ideas and innovative inventions to cure blindness. Many scientists in the past thought vision could be imitated by somehow taking what is in front of a blind person and putting the image into a computer and transposing it to digital patterns. This kind of method would require a blind person to have to walk around with a computer and a bunch of other bulky stuff. However, recently Optobionics has created a new chip called the Artificial Silicon Retina. The ASR is incredibly small in size.

The ASR is a microchip that runs off of solar power. It is packed with approximately 3500 solar cells. How it works is it is inserted between tissue in the back of the retina. When light enters the eye it is directed to a thin membrane in the back of the retina. This is where the ASR is inserted. The solar cells in the microchip convert light into electrical pulses which stimulate the nerves behind the retina and sends a signal to the brain via the optic nerve. Another invention that is being worked on is the Artificial Retina Component Chip. This chip is also implanted at the back of the retina. There are a few differences however between the ASR and the ARCC. The ARCC is powered by a laser that is mounted onto a pair of glasses that the patient will wear. Also, the ACCR chip uses a charged plate that stores electrodes which stimulates the nerves behind the retina. This is thought to be less damaging to the retinal tissue than too much electrical stimulation.



However there is still more experimenting to be done before this device can be FDA approved.

Sources:

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