Opportunity Of Bionic Eye

Today, an estimated 40 million are blind with a further 290 million people visually impaired. Within the midst of this vast issue is a device known as the bionic eye. Blind people with macular degeneration and retinitis pigmentosa need this device for navigation, facial recognition and daily functioning, such as reading the time or recognising how much money is in their hands. Australia created the first bionic eye, using a small camera attached to a pair of glasses. The camera captures images and sends the data to an externally worn body processing unit and then a receiver. The receiver passes the information to a retinal implant in the patient (back of the eye). Electrodes convert these signals into electrical impulses, stimulating the cells in the retina which connect to the optic nerve. The optic nerve transmits these impulses through the visual cortex which can process the image. The image the person sees is very low resolution, consisting of black and white dots. It will be perceived as phosphines (flashes of light in a visual field) which is delivered by electrodes.

The technology for the bionic eye is still very new, and thus has disadvantages and advantages. Costs start at $150,000USD, and the process is lengthy. Approximately one month after the procedure, once the eye has healed, the patient is able to try the glasses and activate the bionic eye. It takes a further 6 months for the brain to learn to interpret these signals and for the bionic eye to work at it's full potential. The length of the process, including the constant checks ups with doctors and scientists, as well as rehabilitation places a huge drain on the health care system and incurs further cost as these factors are all expensive.

These elements may seem overwhelming, but what is even more frightening, is the cost of being blind. Being blind is expensive. Every year in Australia, blind people with macular degradation and retinitis pigmentosa spend $15,948 USD (Children), $17,701 USD (Adult) and $14,686 USD (Retired). These calculations are based on numerous factors which includes: low vision aids, low vision rehabilitation, housing benefit, social security, tax allowance, depression, hip replacement, community car and residential care. In 20 years the average blind adult would spend more than double the price of paying for a bionic eye.

Not everyone is eligible for the bionic eye. Recipients must be at least 25 years old, and live in a developed country with world class scientists. Because this device has been developed for retinitis pigmentosa, people with other eye diseases would not be able to receive the product. These factors eliminate the option of this technology being even available for third world countries and certain social classes.

On the social side, visual impairments can impact the normal sequence of learning in language and cognitive developmental areas as well as spark prejudice. As a result, these students may experience low self-esteem that limits their sense of mastery over their own lives. However, these issues can be prevented with even minimal sight from a bionic eye. The bionic eye allows people to read, thus students would not have to learn braille, fostering a better education.

Similar to many forms of technology, the bionic eye is like a negative and positive see-saw trying to reach success. To this date bionic eye technology has restored basic sight to those vision impaired, allowing them to communicate better socially, become more mobile as well as

independent. It has a great impact of people's quality of life, through reading or even seeing the face of your loved one for the first time, even if it looks like a teenage kid's computer game.

However, at the same time, to be able to use the device you would most likely have to have retinitis pigmentosa, be extremally rich, do not live in a third world country and not a child. Sorry! Nevertheless, If scientists and researchers continue to strive to create a more effective bionic eye, there is the potential that it can help thousands of people. The Bionic eye was a success, let's hope the bionic eye is not too far behind.