Researchers at the University of South Florida have developed a wireless implantable device for the monitoring and auto regulation of intraocular pressure.

A well established risk factor for glaucoma is elevated intraocular pressure (IOP), which ultimately destroys retinal ganglion cells and ends the flow of visual information to the brain. Vision impairment or loss that occurs in glaucoma is currently irreversible, therefore there is a great need to further understand how glaucoma can be controlled before vision loss occurs. However, generating reliable models for glaucoma as well as measuring the intraocular pressure of animal models in glaucoma research remains a challenge.

This revolutionary technology developed by our inventors is an implantable and programmable device for measuring intraocular pressure continuously, as well as delivering or extracting very small volumes of fluid to or from the body.

For the study of glaucoma, the technology gives researchers a continuous data stream of intraocular pressure, as well as complete control of pressure levels. By providing a wireless and constant stream of ocular pressure data, this device will save researchers considerable time as compared to the standard technique of manual pressure sampling, as well as provide a much higher sample rate. Furthermore, this device will allow researchers complete and reproducible control of the specific input parameters they want to experimentally investigate.

**ADVANTAGES:**
- Continuous pressure monitoring
- Eliminates manual sampling of pressure
- Greatly increased sample rate
- Programmable pressure control
- Wireless

**System for Monitoring, Induction and Regulation of Intraocular Pressure**

A cannula in the eye feeds pressure signal directly to a sensor in the pump. Controller then compares sensor output with desired output and drives the pump motor and piston accordingly to slowly draw or eject fluid through the same cannula and set IOP at the desired level.

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