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Korea designs smart contact lens for diagnosing and treating glaucoma

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A new paradigm for monitoring and control of intraocular pressure in glaucoma patients



A research team at Pohang University of Science and Technology (POSTECH) in South Korea has developed a smart contact lens by combining an intraocular pressure (IOP) sensor and a flexible drug delivery system to manage IOP measurement and medication administration in glaucoma patients.

Glaucoma is a common ocular disease in which the optic nerve malfunctions due to the increased IOP caused by drainage canal blocking in the eye. This condition narrows the peripheral vision and can lead to vision loss in severe cases. Glaucoma patients have to manage IOP levels for their life-time. Automatic monitoring and control of the IOP in these patients would significantly improve their quality of life.

The new smart contact lens is expected to make possible a personalised glaucoma treatment with maximum efficacy and minimal side effects. In addition, the feedback system would be applicable to various wearable devices other than smart contact lenses as well.

“We hope the early commercialisation of the newly developed theranostic smart contact lens for diagnosing and treating glaucoma intraocular pressure to provide glaucoma patients’ compliance”, said the researchers.