

# Smart contact lens could diagnose diabetes

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Researchers in South Korea, have developed smart technology that allows for the diagnosis of diabetes and treatment of diabetic retinopathy.

Professor Sei Kwang Hahn and his team from POSTECH have invented a smart photonic contact lens and a wearable medical device which can diagnose diabetes and treat diabetic retinopathy.



The team successfully developed a smart contact lens with an integrated micro LED and photodetector which can measure glucose concentration in the conjunctival blood vessels by analysing the NIR light. With this development, they succeeded in diagnosing diabetes.

When they then tested their new smart LED contact as a treatment for diabetic retinopathy in rabbits they found a significant reduction in the production of new blood vessels in the retina, verifying the clinical feasibility of the contact lens as a therapy for diabetic retinopathy.

Professor Hahn said, "This newly developed device will not only let people living with diabetes monitor their blood glucose levels in real-time, it will also enable medical treatment for retinopathy – a common complication from diabetes."

On the basis of the current results, Professor Hahn and his team also developed a smart wearable medical device that can analyse the glucose concentration in sweat. This is something they are working to verify could help support a diagnosis of diabetes.

In relation to the results of the research Professor Hahn said, "The development of the smart LED contact lens that can diagnose diabetes and treat diabetic retinopathy with light is a world first. We now have to work to make this technology commercially viable and affordable for people living with diabetes. This is our goal."