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AI â??Eye Scanâ?• offers new way to detect diabetes without blood tests

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AI was precise in correctly identifying diabetes using retinal photographs in the test group with 95% sensitivity



A team of researchers from Yenepoya (Deemed to be) University (Mangalore), Madras Diabetes Research Foundation (Chennai), and Emory University (Atlanta, USA) have detected a way to detect diabetes among Indians by taking a high-resolution photo of the retina (back of the eye).

The retina is the only place in the entire body where doctors can see live blood vessels without any surgery or invasive tools, by clicking a photograph. The scientists have used artificial intelligence (AI) techniques to look at the feature of the blood vessels and found that in the veins in the eyes show considerable changes in people with diabetes.

This research study has been published in Diabetes Technology and Therapeutics journal on 23th Jan 2026. This study shows that AI can spot tiny warning signs in the eye's blood vessels that are invisible to the human eye that can differentiate people with and without diabetes without a finger prick blood test.

"The study has utilised routine retinal images already captured during standard eye examinations. We noticed that there are subtle changes in the eye blood vessels that start, even before diabetes develops", notes Dr R. Rajalakshmi, senior author, who is the Head of Medical Retina and Ocular Research at Dr. Mohan' s Diabetes Specialities Centre and Madras Diabetes Research Foundation.

Dr V. Mohan, Chairman of Dr. Mohan' s Diabetes Specialities Centre and a senior diabetes expert in India, explains why this matters: "India has over 100 million people with diabetes, and very often, many do not even know, they have it. If use of AI tools with simple retinal photos can help early diagnosis of diabetes, it can be used real-time in future, to screen for diabetes. We have to validate these research findings in a larger population."