Detecting eye diseases using smartphone technology

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Diabetic macular edema

Researchers at the Medical and Surgical Center for Retina have developed software that detects eye diseases such as diabetic macular edema using a smartphone. The system is aimed at general physicians

who could detect the condition and refer the patient to a specialist.

The software was developed in collaboration with biomedical engineers from the ITESM and uses the camera of the phone to detect any abnormality in the thickness of the retina. "The idea is to detect and prevent diseases in general practice. We are not replacing the specialist, we want to know which patients have a disease and make an early detection," says Dr. Juan Carlos Altamirano Vallejo, medical director of the Medical and Surgical Center for Retina.

He adds that the technology is designed for general physicians, "who support the health system in Mexico and, even without in-depth knowledge of ophthalmology, can, with this tool, detect certain abnormalities and send the patient to the specialist."

Using the software will reduce costs and potentially streamline the Mexican health system. Results from the app are immediate. "We start off with the fact that it is much cheaper to prevent than to cure blindness."

The app also has utility in rural communities, where expertise in areas such as ophthalmology are scarce due to the costs of equipment to detect these diseases. Currently, only visiting specialists can do this kind of diagnosis.

"It will help those who are already blind when they see the doctor. And we needed to go a step back, to know who is at risk and needs to go to a specialist. Not wait for a doctor," says Altamirano Vallejo.

Software development has been satisfactory and is expected to soon be marketed and incorporated the basic health system.

Altamirano Vallejo comments that the Medical and Surgical Center for Retina is a small company with just ten employees dedicated to ophthalmology and retina special medical care. It is also dedicated to biomedical and pharmaceutical research, to develop diagnostics and equipment applicable to society. "We want to give back to our community everything it gives to us, trying to pay the mortgage we all have with Mexico."

Provided by Investigación y Desarrollo

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