INNOVATION PARTNERSHIPS
UNIVERSITY OF MICHIGAN

KalEYEdoscope: An Affordable, Remote Monitoring System for Tracking the Progression of Age-Related Macular Degeneration

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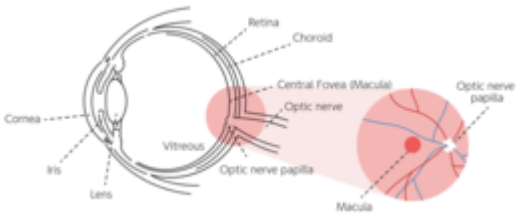

Technology ID
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Category
Digital Health
Life Sciences

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OVERVIEW

A digital, handheld device to monitor progression of age-related macular degeneration

- Effective for patients with differing degrees of visual acuity and varying severities of AMD
- Allows patients to be notified if there were changes which would necessitate an appointment

BACKGROUND

Age-related macular degeneration (AMD) is a degenerative disease of the retina and the leading cause of adult blindness in industrialized countries, affecting 190 million people worldwide. When left untreated, AMD results in central vision loss. Progression of AMD to blindness is preventable given that proper treatment is administered within a narrow window of time. The current standard of care requires patients with AMD be monitored via periodic physician assessments at intervals as short as every three to six months. Still, even with appropriate surveillance, significant changes in AMD may occur between these appointments, causing patients to lose their optimal window for initiating treatment to prevent blindness. While additional methods to monitor this condition are needed, there are currently no effective at-home solutions to help patients seek treatment within this window. The gap in active surveillance necessitates an affordable, remote solution for monitoring AMD.

INNOVATION

Researchers at the University of Michigan have developed a digital, handheld, standalone device that delivers at home monitoring of AMD progression. The KalEYEdoscope consists of an

injection-molded shell that houses a graduated focusing mechanism, two tactile buttons, a battery, a processing unit, and a small screen on which the software component is displayed. The focusing mechanism allows for examination of patients with differing visual acuity, and it is efficacious in differentiating patients with varying severities of AMD. The device is monocular and therefore eliminates potential filling-in bias from the contralateral, less-affected eye. The software component of the device identifies a patient's minimum distortion-detection threshold (MDDT) longitudinally over a sequence of trials. This invention can therefore be readily incorporated into the user's daily routine and is designed to remotely and accurately identify when the patient should seek treatment for AMD.