Improved experience for children and adults in visual field testing

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Technology description

This optometry device uses a technique that is more natural for the patient than current gold standard visual field tests for diagnosing ophthalmologic conditions, resulting in more comfortable experience for patients and thus accessible to a wider patient group, including young children.

The Challenge

The measurement of visual field defects is used to diagnose various ophthalmologic conditions, from glaucoma to brain tumours, and in age groups ranging from small children to the elderly. However, there are several issues with current visual field tests that include a lack of patient compliance and inaccurate test results due to incorrect patient responses.

Technology

The technology developed by researchers at the University of Edinburgh overcomes the patient compliance issues observed with current devices by avoiding the need for uncomfortable head restraints and a requirement to gaze at one location for prolonged periods. The child mode contains animations to keep the interest of the child on the screen and uses their natural eye movement in response to the animation stimuli to measure their visual field.

Exemplification Data

The device was tested with glaucoma patients in a clinical study and in comparison to the current gold standard and which have shown encouraging results. Visual field defects were also correctly identified by the test in the eyes of children with suspected visual field defects.

Publication

Murray, I.C., et al., A novel technique for automated static perimetry in children using eye tracking. Proceedings of the IEEE Engineering in Medicine and Biology Society July 2013, Japan.

Application area

Device for measuring visual field defects
Device for glaucoma diagnosis and monitoring

Advantages

Less demanding test for the patient; accessible to a wider range of patients

An improved and more comfortable patient experience
Device is smaller in size than projector based, current gold standard devices
The test has the potential to be faster than the format of current visual field tests
Technology has child mode for use in children

Institution

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