

Holograms make for better vision tests

July 5 2007

A new paper published in the July 1 issue of OSA's *Optics Letters* shows that researchers in Australia have created a new one-step test that uses holograms to diagnose the astigmatic error of the human eye, a key measurement in determining the appropriate prescriptions for eye glasses in patients.

This new technique adds to an earlier one, developed by the same researchers, for using a single hologram to measure another important property, the spherical refractive error of the eye.

In this new test, patients view a hologram consisting of sunburst patterns; by reporting which sunburst lines appear clearest, the eye doctor can obtain information he or she can use in determining the correct prescription for the patient.

Traditionally, patients look through a series of lenses until they find which one gives each eye the clearest view of a distant target such as an eye chart on a wall. This multi-step process of finding the right lens can be cumbersome and complex. Holography offers many advantages including simplicity, high speed and low cost and could open new doors in our understanding of human vision.

This approach still needs to be tested on young astigmatic individuals, whose nature of vision is not fully known. The same method has also been found to work well in measuring the refractive error of non-astigmatic subjects.

The results of that research will appear in a future issue of OSA's journal JOSA-A.

Citation: "Holographic multivergence target for subjective measurement of the astigmatic error of the human eye," *Optics Letters*, Vol. 32, Issue 13, pp. 1926-1928.

Source: Optical Society of America

Citation: Holograms make for better vision tests (2007, July 5) retrieved 22 September 2024 from <https://medicalxpress.com/news/2007-07-holograms-vision.html>

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