

'Twinkle' eye test could improve AMD diagnosis

October 24 2007

Scientists at UCL (University College London) have developed a more reliable test for detecting vision loss in people with age-related macular disease (AMD), the leading cause of blindness in the UK and US. The method, which centres on a visual illusion, could lead to earlier self-diagnosis of sight deterioration – encouraging patients to access medical assistance earlier on and potentially delay loss of vision.

Recent developments in the treatment of AMD mean that vision can be retained in some people with the injection of drugs into the eye, as long as they present to an eye clinic soon after the development of symptoms. These advances mean that accurate diagnosis is increasingly crucial in delaying sight-loss.

The new test, described in the current issue of PLoS ONE, relies on a visual illusion known as the 'twinkle after-effect', where a moving pattern can be induced in regions of the eye which have vision loss. Previously, this illusion has been demonstrated in normally sighted subjects, by using artificial scotoma (a way of blocking vision in a specific area). This is the first time it has been translated to people with eye disease and the results indicate it could be a powerful diagnostic tool.

Dr Michael Crossland, UCL Institute of Ophthalmology, is one of the researchers involved in this study. He explained: "At present, people identified as being at risk of AMD are given a grid chart to observe on a daily basis, and are instructed to attend hospital if they notice any new

distortion on this chart.

“However, as many as 1 in 2 people will not be able to detect their vision loss using this chart, as the brain ‘fills-in’ the missing information and perceives the chart as normal, when they actually should see distortion.

“The initial data on our test indicates that it is quick, accurate and resistant to the effects of filling-in.”

Dr Peter Bex from Harvard Medical School, a co-author on the paper, said: “The quality of the results from this very simple test is similar to those obtained with high-tech equipment currently only available in certain specialist clinics or research centres.”

Dr Crossland added: “At present our test still relies on specialist hardware and software and has only been tried on people with established macular disease. Our aim is that we can adapt this system so that people can have a simple test to check their own vision at home. This will ensure they come to the hospital or see a specialist in time for any possible treatment, giving them the very best chance of delaying the onset of AMD and preserving their vision. Obviously these advances will take some time, so for now the best thing people can do is to ensure they check their vision regularly by the means advised by their specialist.”

Source: University College London

Citation: 'Twinkle' eye test could improve AMD diagnosis (2007, October 24) retrieved 5 May 2024 from <https://medicalxpress.com/news/2007-10-twinkle-eye-amd-diagnosis.html>

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