MatchedFlicker

Earlier, more accurate diagnosis and disease visualization with MatchedFlicker®

Frequently Asked Questions

What is MatchedFlicker?

MatchedFlicker® is a patented, FDA-cleared software solution developed at the University of Pennsylvania School of Medicine that enables fast and accurate comparison of digital fundus images to aid clinicians in diagnosis. MatchedFlicker automatically combines time-series images selected from a patient record to create an animation wherein images are aligned, superimposed and alternated back and forth. This 'Automated Alternation Flicker' (AAF) technique has its scientific basis in the brain's innate ability to differentiate moving objects from still ones. Leveraging this capability and the ubiquity of fundus photography in eye care, AAF enables ophthalmologists and optometrists to quickly and accurately detect disease progression in a highly cost-effective and patient-friendly manner using existing equipment. With MatchedFlicker, even very subtle change that can be very hard to see in side by side comparisons is almost impossible to miss in flickers.

How are flickers used in diagnosis?

MatchedFlicker is FDA-cleared and CE-certified as an aid to ophthalmologists and optometrists in diagnosing diseases of the posterior eye. Once an image is acquired, a technician can easily generate a flicker comparing the new image to the oldest available digital image in the record. In most cases, if the flicker is static (no change at all) or only subtle change is visible, there may not be need for any further follow-up. Often times, however, optic disc changes or other progression in patients already at elevated risk for disease may be a signal that a new or modified treatment plan is warranted. Although most insurers today do not pay for general screening using fundus photography, the ability to rapidly compare new images to prior baseline photos could make screening cost-effective for at-risk populations, including those over 65.

To date, published studies have confirmed the utility of MatchedFlicker to detect changes related to glaucoma as well as retinopathy of prematurity. Clinicians have also reported the ability to detect changes related to macular disease, diabetic retinopathy,

Does MatchedFlicker have published data supporting its use?

Yes, several published studies from leading ophthalmologists and optometrists support its clinical value. Data has been published in journals such as Ophthalmology, Archives of Ophthalmology, and American Journal of Ophthalmology, and has been presented at major ophthalmic meetings such as American Academy of Ophthalmology, ARVO and American Glaucoma Association.

A more complete list of references is available on the EyeIC website (www.eyeic.com/publications.php).

What about patient education?

Flickers are a unique and intuitive way to visualize disease progression. Seeing images of one's own eye (versus canned animations or models) can have profound effects on engagement and outcomes. A recent published study from the National Health Service-sponsored diabetic retinopathy screening program in the UK[1] showed a clinically meaningful 1% improvement in HbA1c levels in only three months by incorporating retinal images into patient education.

Learn more about the MatchedFlicker system at http://www.eyeic.com

[1] Rees, G, Lamoureux, EL, Nicolaou, TE, Hodgson, LAB, Weinman, J & Speight, J 2013, 'Feedback of personal retinal images appears to have a motivational impact in people with non-proliferative diabetic retinopathy and suboptimal HbA(1c): findings of a pilot study' *Diabetic Medicine*, vol 30, no. 9, N/A, pp. 1122-1125.