Dry Eye Diagnosis and Monitoring Software

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Technology description

Summary

Clinicians at Moorfields Eye Hospital, the leading provider of eye health services in Europe have developed the first medical device which is able to quantify dry eye in a patient. The software quantifies the number, distribution and size of fluorescein staining allowing screening, diagnosis and monitoring of the dry eye and other eye diseases.

Market Opportunity

Dry Eye Syndrome is the most common eye disease with an estimated 49 million people affected in the seven major markets (US, Japan, France, Germany, Italy, Spain and the UK) in 2010. As further estimated by patient.co.uk, dry eye affects between 15 and 33 in 100 people and as its prevalence increases with age, it might affect a third of older people. The majority of patients in the UK will seek help from their GP and is often referred to an ophthalmologist.

The American Academy of Ophthalmology recommends that the treatment of dry eye focuses on preserving and improving vision, minimising and preventing the structural damage to the eye and to improve comfort of patients. The most used preparations for dry eye are eye drops and the global sales of dry eye medicines has reached $1.8 billion in 2008. Twenty nine pipeline products are currently undergoing clinical trials or awaiting registration, with 20 more products being currently tested at preclinical stages.

Symptom assessment is a key component of dry eye diagnosis and management and an objective measurement of the severity of the disease can assist consultants in diagnosing and managing the condition and could be used for quantification of dry eye in clinical trials.


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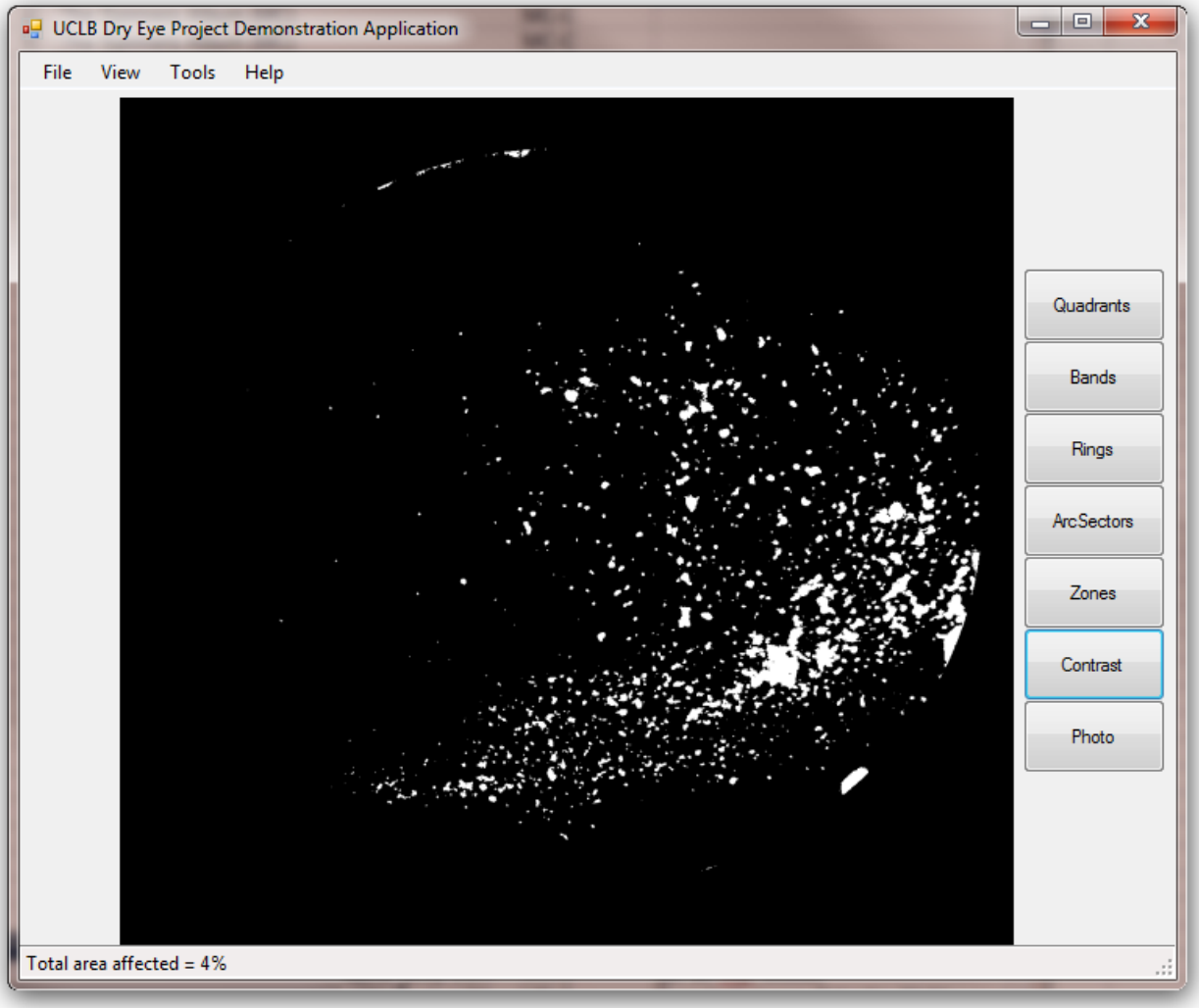
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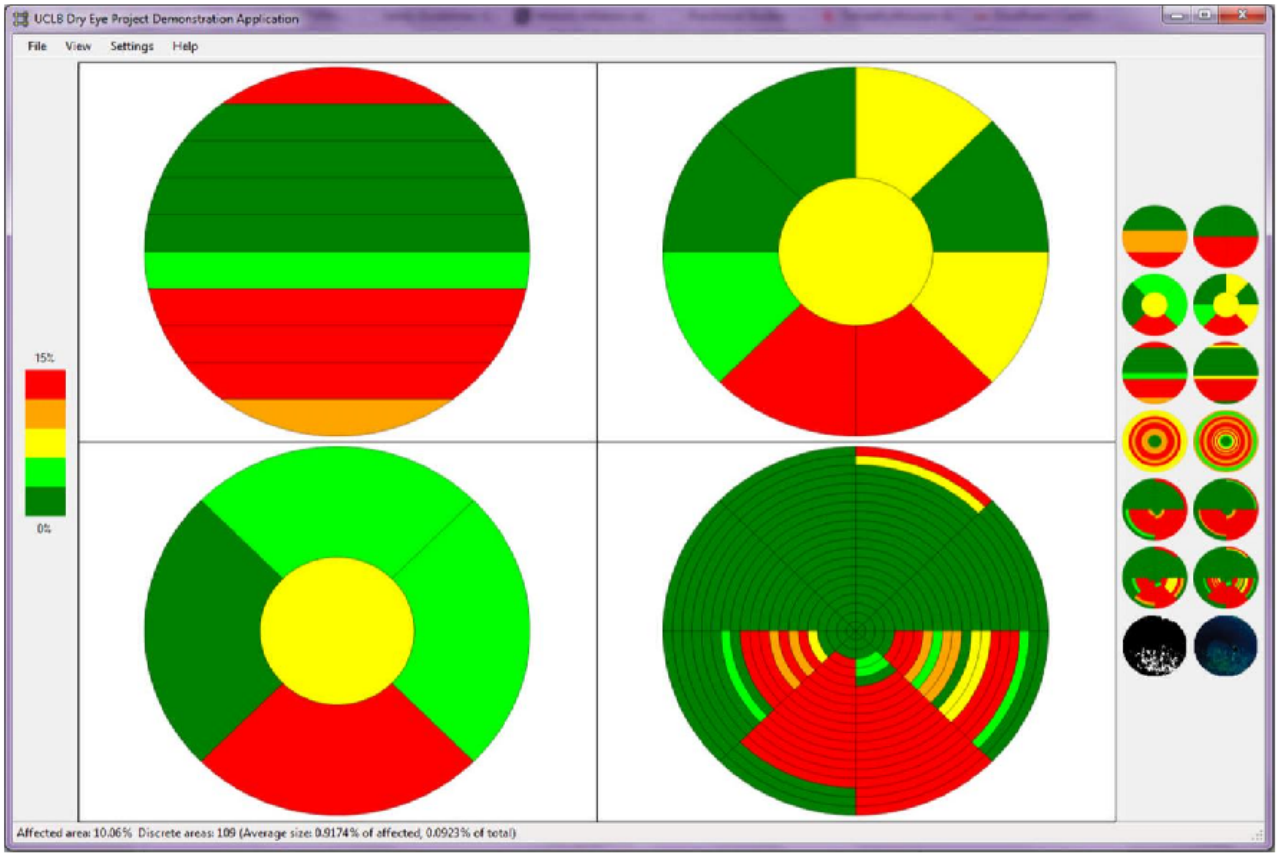

Advantages

Corneal staining with fluorescein is used to diagnose and manage common eye problems from dry eyes and allergic eye disease to corneal ulcers. Currently, the surface damage to the dry eye is analysed by the consultant and compared to one of the grading scales broadly used in the clinic. Since it is assessed by the consultant, the same staining pattern might be classified into different groups by different consultants. Discrepancies in grading have been also observed for the same consultant assessing the corneal staining at different times. This causes problems with diagnosis and monitoring of patient's response to treatment but is especially problematic in evaluating the dry eye products in clinical trails.

The current state of the art for measuring corneal staining is therefore subjective and requires standardisation. The software developed by the consultants at Moorfields Eye Hospital analyses the image of the stained eye and measures different patterns and distributions of blemishes to assist the ophthalmologist in diagnosing and monitoring dry eye and other conditions. The results are displayed to the consultant in the preferred grading methodology allowing objective assessment of symptoms. Corneal images may be obtained and analysed at a site remote to the image capture, providing greater flexibility for acquisition and analysis, and the measurements can be obtained without the need of a consultant in the first instance.

Accurate and objective quantification of dry eye enables clear clinical end point making it an invaluable tool in clinical trials.

Institution

UCL Business

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