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Volume 42, Issue 6, 3 June 2017, Pages 852-856**Prediction of Changes in Visual Acuity and Contrast Sensitivity Function by Tissue Redness after Pterygium Surgery** (Article)Hilmi, M.R.<sup>a</sup>, Che Azemin, M.Z.<sup>a</sup>, Mohd Kamal, K.<sup>b</sup>, Mohd Tamrin, M.I.<sup>c</sup>, Abdul Gaffur, N.<sup>2</sup>, Tengku Sembok, T.M.<sup>d</sup><sup>a</sup>Department of Optometry and Visual Science, Kulliyah of Allied Health Sciences, International Islamic University Malaysia (IIUM), Kuantan, Pahang, Malaysia<sup>b</sup>Department of Ophthalmology, Kulliyah of Medicine, International Islamic University Malaysia (IIUM), Kuantan, Pahang, Malaysia<sup>c</sup>Kulliyah of Information and Communication Technology, International Islamic University Malaysia (IIUM), Gombak, Malaysia[View additional affiliations](#) ▾

## Abstract

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Purpose: The goal of this study was to predict visual acuity (VA) and contrast sensitivity function (CSF) with tissue redness grading after pterygium surgery. Materials and methods: A total of 67 primary pterygium participants were selected from patients who visited an ophthalmology clinic. We developed a semi-automated computer program to measure the pterygium fibrovascular redness from digital pterygium images. The final outcome of this software is a continuous scale grading of 1 (minimum redness) to 3 (maximum redness). The region of interest (ROI) was selected manually using the software. Reliability was determined by repeat grading of all 67 images, and its association with CSF and VA was examined. Results: The mean and standard deviation of redness of the pterygium fibrovascular images was  $1.88 \pm 0.55$ . Intra-grader and inter-grader reliability estimates were high with intraclass correlation ranging from 0.97 to 0.98. The new grading was positively associated with CSF ( $p < 0.01$ ) and VA ( $p < 0.01$ ). The redness grading was able to predict 25% and 23% of the variance in the CSF and the VA, respectively. Conclusions: The new grading of pterygium fibrovascular redness can be reliably measured from

digital images and showed a good correlation with CSF and VA. The redness grading can be used in addition to the existing pterygium grading. © 2017 Taylor & Francis.

## Author keywords

Contrast sensitivity grading pterygium redness visual acuity

## Indexed keywords

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