

# UK Paediatric Glaucoma Society (UKPGS) Annual Meeting Saturday 23<sup>rd</sup> January 2021, 10:30 – 16:35 GMT

Approved CPD 6 points (Royal College of Ophthalmologists)

## Abstracts

### 21 - The effect of photographic light exposure on cup to disc ratio grading

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**Introduction:** Non-stereoscopic digital optic disc photography is integral in the evaluation and management of childhood glaucoma, and will be increasingly important in remote telehealth care. Most non-stereoscopic disc images are acquired without standardised protocol to control brightness and exposure, which may affect the assessment of the optic disc configurations. This study evaluated the relationship between exposure setting and cup/disc ratio (c/d) grading among glaucoma specialists.

**Methods:** Digital, non-stereoscopic colour disc photos were taken of paediatric patients under anaesthesia at 3 light exposure settings using the RetCam (Natus Medical, Inc. Pleasanton, California, USA): dark, medium, and bright. Nine glaucoma specialists evaluated the c/d of the imaged discs in random order. The relationships between the exposure levels and the c/d estimates, as well as between c/d size and variability were evaluated.

**Results:** A total of 150 photos of 50 optic discs were graded. The c/d estimates were significantly larger in bright vs medium (0.53 vs 0.48,  $p < 0.001$ ) or vs dark exposures (0.47,  $p < 0.001$ ). Images with larger mean c/d did not show more variability amongst readers ( $p = 0.59$ ).

**Discussion:** Our results showed that light exposure impacts the c/d grading. This suggests that when evaluating optic discs using non-stereoscopic photographs, exposure consistency is key to decrease the likelihood of over- or under-calling optic disc changes.

**Conclusion:** Image exposure may affect c/d grading of non-stereoscopic disc images. The brighter exposure setting is associated with larger c/d grading. Exposure consistency is key in longitudinal care of glaucoma patients.