Dyop® Acuity Test- Application in elderly patients

Sum R, Woo GC
School of Optometry, The Hong Kong Polytechnic University
Hong Kong SAR, China

PURPOSE
Dyop® (Dynamic Optotype) is a rotating and segmented visual stimulus which utilizes the photoreceptor pixel perception to measure visual acuity. The acuity endpoint is determined by the minimum stimulus area which the Dyop® segment motion can be perceived. The aim of this study is to investigate the use of Dyop® acuity test in measuring visual acuity in the elderly.

METHOD
Subjects aged sixty or above were recruited in a community eye care center of the School of Optometry, The Hong Kong Polytechnic University from April to May 2016. All the subjects went through a comprehensive eye examination. The best corrected distance visual acuities in both eyes were measured by a 4-meter LogMAR E chart and the Dyop® acuity test displayed on a monitor placed at 6 meters. After the examination, the subjects were asked about the ease of responding to either of the tests.

RESULTS
Forty subjects aged 69.5 ± 5.9 years were recruited to this study. The mean LogMAR visual acuity was 0.28 ± 0.17. There was a strong linear relationship between LogMAR and Dyop® visual acuity (Pearson r = 0.92, p < 0.001).

CONCLUSION
The visual acuity measured by the dynamic optotype was comparable to the traditional LogMAR chart. The majority of subjects appreciated the faster measurement time with the Dyop® acuity test. It could be an effective method eliciting visual acuities in the elderly.

ACKNOWLEDGEMENT
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Comments on Dyop®
- Faster (80%)
- Easier to understand (20%)

Comments on Dyop®
- Difficult to determine the endpoint (59%)
- Need more concentration (41%)