

## ٦<sup>th</sup> Article:

### **Photorefraction Vision Screening: Value, Constancy and Credibility.**

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#### **Abstract:**

**Aim:** The purpose of this study was to compare photorefraction using Plusoptix vision screening with that of standard cycloplegic refraction, to detect variability between different observers. **Methods:** In this prospective comparative study, the right eyes of 203 children were included. Refraction was performed for each child using Plusoptix photorefraction screener by two separate observers. Under the effect of cyclopentolate eye drops, retinoscopic cyclorefraction was performed for those under 4 years of age, and cyclorefraction using autorefractometer was performed for those 4 years or older. **Results:** In this study, 203 patients with 203 eyes were included, 110 (54.2%) of them were boys and 93 (45.8%) were girls. The mean age of the children was  $6.61 \pm 4.49$  years (range from 4 months to 16 years), and 74 (36.5%) of them were less than 4 years of age and 129 (63.5%) at least 4 years of age. There was no significant difference between the two observers, as regards mean spherical equivalent ( $+0.52 \pm 1.54$  D with range of  $-3.8$  to  $+5.38$  for observer 1 and  $0.540 \pm 1.63$  D with range of  $-3.8$  to  $+4.8$  for observer 2). In all age groups, there was no significant difference between photorefraction results and the final objective refraction, as regards mean spherical equivalent ( $0.540 \pm 1.62$  and  $0.549 \pm 1.62$  D, respectively). Myopic shift was noted with higher refractive errors. **Conclusion:** Compared with standard cycloplegic refraction, photorefraction using Plusoptix screener was found to be a valuable and reproducible method in spite of the tendency to myopic shift at higher refractive errors in children.