

## Investigation of the Functional Impact of Amblyopia on Visual Skills in Children

**Authors :** Chinmay V. Deshpande

**Abstract :** Purpose: To assess the efficiency of visual functions and visual skills in strabismic & anisometropic amblyopes and to assess visual acuity and contrast sensitivity in anisometropic amblyopes with spectacles & contact lenses. Method: In a prospective clinical study, 32 children ageing from 5 to 15 years presenting with amblyopia in a pediatric department of Shri Ganapati Netralaya Jalna, India, were assessed for a period of three & half months. Visual acuity was measured with Snellen's and Bailey-Lovie log MAR charts whereas contrast sensitivity was measured with Pelli-Robson chart with spectacles and contact lenses. Saccadic movements were assessed with SCCO scoring criteria and accommodative facility was checked with  $\pm 1.50$  DS flippers. Stereopsis was assessed with TNO test. Results: By using Wilcoxon sign rank test p-value  $< 0.05$  ( $< 0.001$ ), the mean linear visual acuity was 0.29 ( $\approx 6/21$ ) and mean single optotype visual acuity found to be 0.36 ( $\approx 6/18$ ). Mean visual acuity of 0.27 ( $\approx 6/21$ ) with spectacles improved to 0.33 ( $\approx 6/18$ ) with contact lenses in amblyopic eyes. The mean Log MAR visual acuity with spectacles and contact lens were found to be 0.602 ( $\approx 6/24$ ) and 0.531 ( $\approx 6/21$ ) respectively. The contrast threshold out of 20 amblyopic eyes shows that mean contrast threshold changed in 9 patients from spectacles 0.27 to contact lens 0.19 respectively. The mean accommodative facility assessed was 5.31 ( $\pm 2.37$ ). 24 subjects (75%) revealed marked saccadic defects on the test applied. 78% subjects didn't show even gross stereoscopic ability on TNO test. Conclusion: This study supports the facts about amblyopia and associated deficits in visual skills which are claimed in previous studies. In addition, anisometropic amblyopia can be managed better with contact lenses.

**Keywords :** strabismus, anisometropia, amblyopia, contrast sensitivity, saccades, stereopsis

**Conference Title :** ICOO 2014 : International Conference on Ophthalmology and Optometry

**Conference Location :** Bangkok, Thailand

**Conference Dates :** December 24-25, 2014