

## REFRACTIVE STATUS OF TEENAGERS IN A TAIPEI MUNICIPAL JUNIOR HIGH SCHOOL

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**Purpose :** Published school-based data on refraction and ocular biometry, particularly for teenagers in Taiwan are limited. The use of cycloplegic agents in refractive error screening of this age group is an important issue. We report preliminary data on changes in refractive status and intraocular pressure (IOP) before and after cycloplegia in students of a junior high school. The ocular biometry was measured by a reliable optical low-coherence reflectometer (Lenstar LS900) in a non-contact fashion.

**Method :** Sixty-four students with an average age of 14.2 years were included. They were examined by an automated refractometer, a pneumatonometer with and without cycloplegia and Lenstar. Cyclopentolate 1% was instilled into the students' eyes and measurements were taken. Refraction was analyzed as spherical equivalent (S.E.).

**Result :** There were 30 male and 34 female students. The mean S.E. was  $-3.15 \pm 2.28D$  in right eyes and  $-3.02 \pm 2.46D$  in left eyes without cycloplegia; and  $-2.48 \pm 2.48D$  in right eyes and  $-2.60 \pm 2.50D$  in left eyes with cycloplegia. The S.E. became statistically less minus with a mean difference of  $-0.67D$  in right eyes and  $-0.42D$  in left eyes after cyclopentolate application. The mean IOP was  $17.40 \pm 3.12\text{mmHg}$  in right eyes and  $16.26 \pm 3.23\text{mmHg}$  in left eyes without cycloplegia; and  $15.70 \pm 3.30\text{mmHg}$  in right eyes and  $15.38 \pm 3.15\text{mmHg}$  in left eyes with cycloplegia. A significant decrease in mean IOP,  $1.69\text{mmHg}$  in right eyes and  $0.86\text{mmHg}$  in left eyes, was detected. The mean axial length measurements of right and left eyes were  $24.58 \pm 1.22\text{mm}$  and  $24.60 \pm 1.21\text{mm}$ , respectively.

**Conclusion :** Use of cycloplegic agent for the accuracy of refractive error screening or for prescription of glasses in junior high school students is highly recommended. Our results suggest that cyclopentolate could be safely used for mydriatic examination on teenagers without immediate significant increase in IOP. Lenstar may be serve as a clean and satisfactory instrument for obtaining biometric parameters on school screening basis.

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