

Original Paper

Variation of accommodative and vergence responses with viewing at near addition lenses in three near viewing distances

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Abstract

Background and Objective: It is well accepted that accommodation system is characterized by steady state error in focus. Usually near addition lenses are prescribed to presbyopic individual for treatment of binocular motor problems such as convergence excess and accommodative disorder. The purpose of this study was to evaluate the near addition lenses in accommodative and vergence responses at three viewing distances.

Materials and Methods: This semi-experimental study was done on 42 students of 17-25 years old in Zahedan, South-Eastern Iran during 2009. After correction of refractive error, phoria states with APCT and binocular and monocular lag of accommodation by MEM method with and without +2.00 lenses in three different distances (30, 40, 50 cm) was measured. Data analyzed by ANOVA, t-student and paired t-tests.

Results: There was significant difference between average of lag of accommodation and phoria at various distances, with and without lens ($P < 0.05$). Also, there was significant difference between mean of lag in 3 fixation distance ($P < 0.017$). There was no significant difference between average of lag of accommodation and phoria at various distances in three group of refractive error.

Conclusion: Our results showed that, near addition lens reduce the lag of accommodation. It is proposed, therefore, according to near emmetropization theory addition lenses may be effective in reducing of the myopia progression.

Keywords: Addition, Lag of accommodation, Phoria

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