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Influence of free-space vision training on the vergence system

(F. Pluháček, L. Machýčková, M. Halbrštátová) 3
This article presents a study of an influence of a simple vision training technique on selected basic parameters of a vergence system with regard to the compensation of the near exophoria and insufficiency convergence. The studied parameters were near fusion vergence and near point of convergence. The vision training was applied during three weeks period. The monitored parameters were measured before, during and two weeks after the training. The performed analysis showed that used training technique is effective tool for vergence system improving. Thus, it can be used for management of insufficiency convergence and decompensated near exophoria.

Analysis of influence of accommodation on changes in high order aberrations of human eye

(E. Hedbávná, J. Cendelín, J. Novák) 7
The work studies the influence of accommodation on changes in the high order aberrations of the optical system of the eye. Subjective and objective methods of assessing the accommodative amplitude are reviewed, as well as measurement of aberrations of the eye for the different accommodation rate. Twenty three subjects (age between 21 and 46 years) participated in the research study. Subjective and objective accommodation was measured and aberrations during far and near vision were measured with the iTrace aberrometer. There was a statistically significant relationship between the increasing age and impairment of the subjective amplitude of accommodation. Changes in aberrations during accommodation in relation to age and the amplitude of accommodation were observed in this sample, but the relationships failed to reach the level of statistical significance.

Keywords: accommodation, amplitude of accommodation, high order aberrations

Influence of cylinder axis error of spherocylindrical correction on visual acuity and contrast sensitivity

(R. Samuelová, J. Novák, P. Novák) 11
This work describes a theoretical and experimental analysis of the influence of the incorrect position of the cylinder axis of spherocylindrical correction on the value of visual acuity and contrast sensitivity. In the case that the cylinder axis of the spherocylindrical corrective lens is determined incorrectly, then the lens does not compensate fully refractive errors of the eye and the residual

unwanted refractive error is present. This residual dioptric error may have the influence on visual acuity and contrast sensitivity.

Keywords: refractive errors, astigmatismus, cylinder axis, visual acuity, contrast sensitivity

Department of Optometry and Orthoptics, Faculty of Medicine, Masaryk University – achievements in 2013

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Imaging of semiconductive structures by scanning microwave microscopy

(M. Navrátil, V. Křesálek, J. Kudělka, T. Martínek) 22
This work deals with measuring principles of scanning microwave microscopy (SMM) which comes out from atomic force microscopy (AFM). This method was applied on semiconductive structures – bipolar PNP transistor and CMOS integrated circuit. Their topographical properties together with capacitance and dopant concentration were visualized. Atomic force microscope Agilent 5420 was utilized.

American and international standards convergency (M. Miler) 24

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