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BOOK OF ABSTRACTS

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ORTHOKERATOLOGY AND HAL-TYPE DEFOCUS SPECTACLE LENSES IN SLOWING MYOPIA PROGRESSION IN CHILDREN

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Introduction. According to research data, the effectiveness of monofocal spectacles in myopia control is low. At the same time, orthokeratology correction shows promising results in slowing myopic refractogenesis. Researchers are also interested in spectacles with specially designed lenses as a possible therapeutic approach for myopia treatment in children.

Aim. To evaluate the effectiveness of orthokeratology lenses and spectacle lenses with peripheral myopic defocus on the course of myopic refractogenesis in children.

Methods. A comparative retrospective analysis was conducted on the effect of orthokeratology correction (observation group I, 30 children, 60 eyes), correction with HAL-type (Highly Aspherical Lenslets) aspherical spectacle lenses with peripheral myopic defocus (observation group II, 25 children, 50 eyes), and correction with monofocal spectacles (observation group III, 25 children, 50 eyes) in children aged 8-12 years with progressive myopia. All clinical ophthalmological examinations were performed after obtaining informed consent. Myopia progression was monitored based on refractokeratometry data and axial eye length (IOL Master 700 Zeiss optical biometer, Germany). Statistical processing of the obtained results was performed using the "STATISTICA 13 En" program (StatSoft, license No. JRR709H998119TE-A). Statistical data are presented as median and interquartile range Me (Q25; Q75).

Results. In Group I, the average refraction increase was 0.22(0.18;0.27) D/year. In Group II, it was an average of 0.23(0.18;0.32) D/year ($p>0.05$). For patients in Group III, the average was 0.88(0.67;1.15) D/year ($p<0.05$). The increase in axial eye length in Group I was 0.18(0.15;0.22) mm/year, in Group II it was 0.17(0.15;0.21) mm/year ($p>0.05$), and in Group III it was 0.35(0.28;0.38) mm/year ($p<0.05$). The results showed that in children who started using orthokeratology lenses or HAL-type lenses with peripheral myopic defocus at the beginning of myopic refraction development, myopia progression occurred on average 2 times less frequently in 78% of cases compared to children using monofocal spectacle lenses.



Conclusion. Myopia correction using orthokeratology lenses and HAL-type spectacle lenses demonstrates an advantage compared to optical correction with monofocal spectacles. When these methods are prescribed at the initial stages of myopia development, its progression can be slowed down in an average of 78% of cases over 12-18 months of observation.

TRAINING VISUAL SKILLS WITH TABLE TENNIS

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Introduction. Modern work and learning conditions require spending a lot of time on near work. Given the future trends in technological development, the amount of this type of work will only increase. Therefore, it is crucial for children today, in order to form proper and complete visual functions, to choose a sport that will improve their condition. According to literature, it is known that the amplitude of accommodation in children who play table tennis is significantly higher than in others in the same age groups.

Purpose. To investigate the reserve of absolute accommodation in children who play table tennis.

Methods. We investigated the reserve of absolute accommodation (RAA) in children aged 11-12. The study group consisted of 15 children, while the control group had 20 children. The children in the study group played table tennis at least 4 times a week, while the children in the control group did not play any sports involving a ball.

Results. Children from the study group had an RAA within the range of 3.6 ± 0.4 D ($M \pm s$). Children from the control group had RAA values of 2.0 ± 0.4 D ($M \pm s$). This is significantly lower than in the study group ($p < 0.05$ using the Mann-Whitney U test).

Conclusion. The introduction of table tennis classes into the educational process should contribute to the formation of proper visual functions in children with different types of refraction, which is very necessary in an inclusive education.