

A STRATEGY TO REDUCE DIGITAL EYE STRAIN OF UKRAINIAN STUDENTS

¹Guzun O., ²Bezdetko P., ¹Khramenko N., ¹Konovalova N., ¹Bushueva N.

¹The Filatov Institute of Eye Diseases and Tissue Therapy of the National Academy of Medical Sciences of Ukraine, Odessa, Ukraine

²Kharkiv National Medical University, Kharkiv, Ukraine

Abstract

An e-learning system will require additional time spent in front of a digital device. Spending long hours in front of these devices can lead to many ocular problems in students. Digital eye strain (DES) is the most common eye problem associated with prolonged digital devices use, characterized by symptoms such as dry eyes, itching, foreign body sensation, watering, blurred vision and headaches.

An analysis of the prevalence of Digital Eye Strain (DES) among Ukrainian students (320 students) during the Covid-19 pandemic was made.

A comprehensive examination and treatment of 70 students (140 eyes) with to DES at the age of 18 to 25 years, was carried out. Group 1 consisted of 26 students (52 eyes) and group 2 – of 44 (88 eyes). All students underwent a course of laser stimulation (LS) using a diode laser (10 daily sessions were performed on a CM-4.3 device, $\lambda = 650 \text{ nm}$, $W = 0.4 \text{ mW / cm}^2$, $t = 300 \text{ s}$). The students of the 2nd group were recommended additionally after LS to use for 3 months the vitamin-antioxidant complex Nutrof®Forte, 1 capsule once a day.

The prevalence of Digital Eye Strain with more than 6 symptoms reaches 84.4% in this sample of students, which is associated with a young age (18-25 years old), hard and long visual work and active use of digital gadgets and computers during distance learning. This high prevalence of DES underlines the importance of awareness raising and encourages the introduction of targeted screening for DES among students.

The course of treatment, including the intake of a vitamin-antioxidant complex of the AREDS formula with resveratrol and vitamin D₃, can significantly improve visual acuity, increase accommodation reserves, reduce spasm of intraocular vessels by normalizing the balance of the functioning of the sympathetic and parasympathetic parts of the autonomic nervous system and significantly reduce or even eliminate the existing Digital Eye Strain symptoms.

Key words: Digital Eye Strain, Computer Vision Syndrome, prevalence, diode laser stimulation, Nutrof®Forte, Covid-19