*Denisenko D., Dolinina I., Shapovalov I.*

**FACTORS OF FORMING MYOPIA IN ADOLOSCENT AGE**

Kharkiv National Medical University

(Department of Hygiene and Ecology №1)

Research advisor: Assistant Bogachova O.

Kharkiv, Ukraine

**Introduction.** The problem of myopia is greatly increasing these days. And it has great relevance especially among children and adolescent. We used to think that this disease was caused by the genetics, a habit of reading a lot, a long time spending at the computer and smartphones using. The purpose of our study is to identify the main factors in the formation and development of myopia and develop recommendations that would help to avoid this problem.

**Materials and methods.** Our study was based on the works of some scientists:

• Nina Jacobsen (Glostrup University Hospital in Copenhagen, Denmark), who investigated the influence of genetics on the formation of myopia;

• Ian Fleckcroft (University Children's Hospital in Dublin, Ireland) - he tried to understand the influence of the habit of reading on the development of myopia;

• Scott Reed (Queensland University of Technology, Australia) and Chi Luu who founded a theory according to which artificial light cause myopia.

**Results of research.** According to studies repeatedly conducted in Europe, Australia and Asia, a direct addiction was found between the presence of children on the street and the development of myopia. This dependence is explained by the influence of artificial light. Scientists believe that the cause of it is dopamine, produced directly in the eyes. It prevents the deformation of the eyeball under the influence of artificial light. As you know, green and blue light waves focus on the front surface of the retina, and red focus on the backside. Naturally artificial light is closer to red than sunlight.

Thus, when a person is under artificial illumination, signals are sent to the brain that the image is not being focused on properly and the eyeballs receive the stimulus to "grow" and as a result of this mechanism the myopia develops.

Also, development of myopia can caused by how much the visual load is intense at close distances (reading, working at the computer, etc.). If the ocular muscles that responsible for focusing vision at close distances, long remain tense while doing work, they cannot longer completely relax when they look afar, when their tension is not required. As a result, the eye is constantly in a stressed state, which adversely affects the ability of the eye to accommodation.

**Conclusions.** As a result, we can say that the main risk factors for the development of myopia are a long time spent at home under artificial lighting and regular prolonged eye strain.

Focusing on this, we can do recommendations for the prevention of myopia:

1. Perform educational work during daylight hours, and also limit the visual load as much as possible under artificial illumination (reading, writing);

2. Visit an ophthalmologist every two years;

3. Regular walks in the fresh air;

4. Normy work at the computer by time according to hygiene standards:

5 y.o. 15-20 min. per day

6 y.o. 25-30 min. per day

7-9 y.o. 1 min. per day

10-12 y.o. 1 h 20 min. per day

13-14 y.o. 1 h 40 min. per day

15-16 y.o. 2 h per day