

THE PROBLEM OF MYOPIA AND INNOVATIVE METHODS OF ITS TREATMENT

Myopia is one of the most common chronic diseases of the 21st century. Nowadays, people, and especially students, spend much of their wake before the screens of computers and cell phones. Our eyes are not created for such loads, a person has never done so much work "in his own time" in history. This leads to an active increase in the number of short-sighted people.

Symptoms and signs of myopia.

If you are nearsighted, you will usually find it difficult to read road signs and clearly see deleted objects, but they will be clearly visible for close-up tasks such as reading and using computers. Other signs and symptoms of myopia include strabismus, eye strain and headaches. The feeling of fatigue while driving or playing sports can also be a symptom of unadjusted myopia. If you experience these symptoms or symptoms while wearing glasses or contact lenses, schedule a comprehensive eye examination with your ophthalmologist or ophthalmologist to find out if you need a stronger prescription.

What causes myopia?

Myopia occurs when the eyeball is too long, with respect to the focusing force of the cornea and the lens of the eye. This causes the light beams to focus at a point in front of the retina, and not directly on its surface. Myopia can also be caused by the fact that the cornea and / or lens is too bent for the length of the eyeball. In some cases myopia is due to a combination of these factors. Myopia usually begins in childhood, and you may have a higher risk if your parents are short-sighted. In most cases, short-sightedness stabilizes in early adulthood, but sometimes it continues to progress with age. Statistics show if you have not developed myopia before the age of 21, then most likely the problem of myopia has bypassed you.

Treatment of myopia

Myopia can be corrected with the help of glasses, contact lenses or refractive surgery. Depending on the extent of your short-sightedness, you may need to wear glasses or contact lenses all the time or only when you need very clear remote vision, for example, while driving, studying or watching movies.

If you are short-sighted, the first number ("sphere") on the prescription of glasses or the prescription of contact lenses will be accompanied by a minus sign (-). The higher the number, the more short-sighted you are.

Treatment for myopia is a long process.

All methods of treating myopia are aimed at stopping or slowing the development of myopia, as well as preventing the development of various complications that may be caused by myopia.

When treating myopia, glasses are used that serve as a "crutch", that is, they seem to replace the functions of the eye itself. Correction of vision with the help of glasses is carried out against the background of the application of eye drops, which dilate the pupil. Such drops are used to relax the eyes and relieve the spasm of accommodation. Simultaneously with these measures, various exercises can be prescribed to strengthen and relax the eye muscles, exercises with the replacement of lenses.

Methods of treating myopia are divided into the following types:

1. Medical methods of treating myopia. In turn, medical methods are divided into: The use of drugs that strengthen the sclera (calcium gluconate, ascorbic acid); The use of drugs that accelerate metabolic processes in the eyeball and retina (aloe, taufon solution, injection of ATP solution); The use of means of spasmodic accommodation, caused by increased eye strain (1% solution mezatona); The use of drugs that improve blood circulation in the eyeball (nicotinic acid, trentap). To medical methods of treating myopia, were effective, they should be conducted in courses, the best option 2 times a year.

2. Physiotherapy methods These include phonophoresis, laser stimulation of the ciliary muscle, electrostimulation, electrophoresis.
3. Surgical methods of treatment These treatment methods are designed to prevent the progression of myopia and correct refraction. Surgical treatment is used in those patients who have a strong degree of myopia (above 6 diopters).

Surgical operations, which are used to treat myopia, are divided into two groups:

1. Resilient operations are operations in which a certain substance is introduced into the eyeball (posterior part), which retards the expansion of the eye. These operations include posterior scleroplasty and sclera-strengthening injection.
2. Refractive operations are used to correct the optical ability of the eye. These operations include keratotomy, keratomileus, keratofakia, lens extraction. More modern methods of surgical treatment at the moment are excimer laser operations: photorefractive keratectomy and excimer laser cartilage. They reduce myopia by 12 diopters. With myopia, parallel light rays are focused before the retina of the eye, and not on it. The main task in correcting myopia is to "force" the light rays to intersect where it is supposed to be by nature.

One of the most common methods of correcting myopia is glasses and contact lenses. However, both glasses and contact lenses compensate for visual defects only temporarily, but they do not relieve short-sightedness. Today in ophthalmology is used more than twenty methods of treating myopia.

Basic Methods Laser vision correction Refractive lens replacement (lenseectomy) Implantation of phakic lenses Radial keratotomy Keratoplasty (corneal plastic surgery)

The conservative methods of treatment include: correction of vision with glasses or contact lenses; special gymnastics for the eyes; medicines that relieve spasm of the eye muscles; strengthening the general condition of the body, against which the state of the eye muscles improves (therapeutic exercises, massage, water procedures, swimming, etc.); proper nutrition, preferably with the use of biological active food additives (BAD), which contain the necessary vitamins and trace elements that promote proper metabolism in the body.

According to statistics, myopia (nearsightedness) affects about 25-30% of the world's population. Such a disturbance prevents a person from seeing distant objects, and the more severe symptoms of eye disease become, the "circle of vision" already becomes. In this case, most often, myopia develops in childhood or adolescence because of the high visual load with which the learning activity is associated.

Having examined the problem of myopia in the young population, I would like to note with pleasure that among the universities of Almaty in the Kazakh National University. Al-Farabi in physical education classes students are divided into groups on diseases. There are the main groups where students are engaged in health problems and where they are distributed in sections on interests (for example: tennis, basketball, football, etc.), preparatory groups, which consist of students with small health problems and where the physical load is lower, than in the main group, special groups, where students are distributed according to their illnesses and groups of exercise therapy, in which they use physical exercises to treat patients and people with disabilities. In a special group there is a subgroup for myopic students. In class, they have the opportunity to train and improve their vision. For example, they play badminton, where the eyes are concentrated on the valance and thus the muscles of the eyes are trained; students do gymnastics for the eyes and body, which also helps in the treatment of myopia.

Used materials:

- 1) Fast forward 10 years: How will we treat myopia?, by Liverpool, UK May 31, 2015
- 2) Myopia (Nearsightedness), by Gretchyn Bailey; reviewed by Gary Heiting, OD
- 3) ООО «Джонсон & Джонсон», 2017, статья

