



THE ROLE OF MODERN TECHNOLOGIES IN THE DEVELOPMENT OF MYOPIA IN ADOLESCENTS AND PREVENTIVE MEASURES.

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Abstract. There is a complex relationship between modern technologies and the development of myopia, and a sharp increase in myopia cases has been observed worldwide in recent decades. This has become a global health problem, attracting the attention of many scientists and specialists. Many factors influence the development of myopia, including environmental factors and lifestyle. However, there is a growing assumption that the widespread adoption of modern technologies and the increase in their use may be directly related to the increase in myopia.

Keywords: Myopia, Modern technologies, Screen time, Social skills.

Introduction. Modern technologies and eye health: The widespread adoption of modern technologies, particularly computers, smartphones, and tablets, has significantly increased people's time to look at objects at close range. This leads to constant strain on the eye muscles and adaptation of the eye to close-sightedness. It is believed that prolonged exposure to a computer or smartphone screen can cause eye dryness, eye fatigue, and contribute to the development of myopia.

Research and evidence: Numerous epidemiological studies indicate a high risk of myopia in individuals who frequently use modern technologies. For example, a high level of myopia is observed in Asian countries, which may be associated with the rapid development and widespread adoption of technologies in these regions. Studies also show that children who use a computer or smartphone for several hours a day are at higher risk of developing myopia.

Modern technologies and eye health: Increased screen time and its consequences

With the rapid development of modern technologies, the time spent using smartphones, computers, and tablets has sharply increased. This causes a number of problems that can negatively affect eye health. Effects of smartphones, computers, and tablets on the eyes:

Prolonged use of these electronic devices leads to eye fatigue, dryness, and the development of a number of eye diseases. This is due to the effect of screen light, increased time to look at objects at close range, and constant strain on the eye muscles.

Many studies show that increased screen time negatively affects eye health. Increased screen time in children and adolescents increases the risk of developing myopia. Adults experience problems such as eye fatigue, dry eye syndrome, and headache.

Smartphones, computers, tablets, and video games have become an integral part of adolescents' lives. They spend most of the day with these devices, which leads to technology dependency. Dependence on technology negatively impacts adolescents' learning, social interactions, and overall health. They experience decreased attention, sleep disturbances, and increased stress and anxiety.



Dependence on technology leads adolescents to lead a sedentary lifestyle. They spend a lot of time on a computer or smartphone, which leads to a decrease in physical activity. Inactivity increases the risk of developing obesity, cardiovascular diseases, diabetes, and other health problems. Inactivity also negatively affects bone development and leads to muscle weakness.

Dependence on technology and inactivity lead to a decrease in interaction with nature. Teenagers spend a lot of time at home or indoors, which limits their ability to connect with nature. Reduced interaction with nature leads to an increase in the level of stress and anxiety, a decrease in attention, and a deterioration in overall health. Spending time in nature reduces stress, improves mood, and boosts immunity.

The above problems also have a negative impact on the social development of adolescents. Dependence on technology and spending a lot of time on social networks weakens relationships in real life and leads to social isolation. Inactivity and a decrease in interaction with nature hinder the development of adolescents' skills in interaction and teamwork.

A number of measures can be taken to prevent these problems:

- Limiting the use of technology: Limiting adolescents' time to use technology and engaging them in other activities.
- Increasing physical activity: Encouraging adolescents to engage in sports, play outside, and engage in active games.
- Increasing interaction with nature: Encouraging adolescents to go out into nature, take walks, and engage in activities related to nature.
- Development of social skills: Organizing various activities to develop adolescents' skills in communication and teamwork.

Modern technologies and eye health: Preventive measures

With the widespread adoption of modern technologies, prolonged use of computers, smartphones, and tablets can negatively affect eye health.

The risk of developing eye fatigue, dry eye syndrome, myopia, and other eye diseases increases. Therefore, it is important to optimize the use of technologies, take preventive measures such as digital detoxification and eye gymnastics.

Optimization of technology use:

Optimizing the use of technologies means limiting the time of their use, learning the methods of proper use, and taking measures to protect the eyes.

-20-20-20 rule: Looking at objects 20 feet (6 meters) away for 20 seconds every 20 minutes helps rest the eye muscles.

- Screen brightness adjustment: Reducing screen brightness and using a blue light filter prevents eye strain.

- Straight sitting: Comfortable and straight sitting ensures proper heel and back support, which reduces eye fatigue.

-Time limitation: It's important to limit the time spent using electronic devices throughout the day. Prolonged staring at the screen tires the eyes and increases the risk of developing eye diseases.

- Intervals: During long work or study, you need to take a 5-10 minute break every hour.

Digital detoxification:

Digital detoxification means temporarily abandoning technology and focusing on other activities. This helps to get rid of technology addiction, reduce stress and anxiety, and improve overall health.



-Temporary technology withdrawal: Withdrawing from technology for several hours or days a week helps rest the eyes and brain.

-Going outdoors: Spending time outdoors reduces stress and helps your eyes relax.

-Focus on other activities: It's important to focus on other activities such as reading books, exercising, spending time with loved ones.

Eye gymnastics and eye muscle training:

Eye exercises and eye muscle training help reduce eye fatigue and prevent eye diseases.

-Eye rotation: Rotating the eyes clockwise and counterclockwise prevents eye muscle fatigue.

-Close and open eyes: Frequent closing and opening of eyes several times helps the eyes rest.

-Looking at distant objects: Looking at distant objects helps rest the eye muscles.

-Eye massage: Light eye massage restores eye muscles and improves blood circulation.

Factors influencing the development of myopia:

Environmental factors also have a significant influence on the development of myopia. Prolonged gazing at nearby objects, sedentary lifestyle, improper nutrition, and lack of natural light can lead to the development of myopia.

Technological progress and myopia:

The development of modern technologies contributes to the increase in myopia. Prolonged use of computers, smartphones, and tablets leads to constant strain on the eye muscles and adaptation of the eye to close-sightedness. This increases the risk of developing myopia. Also, blue light emitted from electronic devices irritates the eyes and disrupts the sleep cycle.

Prevention of myopia:

A number of measures can be taken to prevent myopia:

- Eye rest: When using a computer or smartphone, look at distant objects for 20 seconds every 20 minutes (rule 20-20-20).

- Proper lighting: Good lighting of the workplace or study area prevents eye fatigue.

- Eye gymnastics: It is important to perform special gymnastic exercises to protect eye muscles from fatigue.

-External environment: Spending more time outdoors, exposing eyes to natural light helps prevent myopia.

-Proper nutrition: Proper nutrition enriched with vitamins and minerals is important for eye health.

- Limiting the use time of electronic devices: It is important to limit the use time of electronic devices and optimize the method of their use.

- Eye examination: It is necessary to regularly see an ophthalmologist and get checked for eye health.

Conclusion: In the context of technological progress, a complex approach is necessary to prevent myopia. It is important to take preventive measures, taking into account genetic predisposition, environmental factors, and the use of technologies. Resting eyes, proper lighting, eye gymnastics, spending time outdoors, proper nutrition, and limiting the time spent using electronic devices can help prevent myopia. Regular visits and consultations with an ophthalmologist are also important. In the future, it is necessary to conduct more research to further improve the methods of preventing myopia.

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