

Study on Risk Factors and Prevention and Control Measures of Teenager Myopia

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Abstract: Due to the continuous improvement of the importance of China's education, China pays more and more attention to the problem of teenager myopia. According to the relevant big data statistics in recent years, the number of teenager myopia in China has ranked first in the world every year, and has become one of the primary problems affecting the normal development of adolescents. Therefore, how to further improve and protect teenagers' vision has become an urgent problem to be solved by China's education and relevant public health departments. Based on this, this paper analyzes the causes of teenager myopia, and expounds the practical situation of relevant preventive measures.

1. Introduction

In recent years, the incidence rate of myopia among young people in China has been increasing every year, mostly young children. According to the statistics of the incidence rate of teenager myopia in China in 2000, the prevalence rate of myopia among primary school students reached 30% in China, and 41% in junior high school students, while 60% in high school students. Until data collection from many countries in the world in 2013-2019, the incidence rate of myopia among China's youth has reached number one in the world, far exceeding that of other countries. The incidence rate of women is higher than men, and the rate in city is higher than rural area. The risk of blindness due to myopia is also increasing, which has a serious impact on the development of young people and visual health. Up to now, the specific causes, prevention and response measures of teenager myopia are still under continuous exploration and research by relevant public health departments, and a large number of experimental research and medical record research are still needed to conduct field research and analysis on its risk factors and prevention and control means, so as to trace the source. Because there are many risk factors affecting teenager myopia, involving genetics, environment and other aspects, so when there is no effective radical cure for myopia at this stage, the first thing to do is to take effective preventive measures, improve their own prevention awareness, clarify the relevant factors that may lead to myopia, and effectively avoid and prevent the risk factors. The following content analyzes several risk factors endangering teenager myopia, and summarizes several prevention and control measures.

2. Analysis on the Fundamental Causes of Teenager Myopia

At present, the fundamental causes of teenager myopia are as follows:

2.1 Genetic Factors

If both parents have eye myopia, the possibility of children's myopia will be relatively high, and the incidence rate of myopia will develop towards family. Myopia patients are formed by the interaction of a variety of genes. Several gene loci closely related to the emergence and development of myopia have been confirmed by research. Multiple genes such as source frame protein A9 and MYP series genes are more likely to be inherited to the next generation. Therefore, this also increases the possibility of myopia in the next generation. A scientific research on the whole myopia gene of Amish family in Pennsylvania shows that most myopia diseases in human

eyes are directly related to multiple genes such as 8q21.3, 12q15 and 5p15.33. Meanwhile, the test of most twins and the test of gene locus confirm that the incidence rate of myopia in adolescents is closely related to their own genetic genes. Many experiments show that genetic inheritance is an irresistible factor for human beings. The relevant public health departments must pay more attention to ^[1].

2.2 Eye Fatigue is Another Cause of Teenager Myopia

At present, the extension of people's study and working hours has caused people's excessive use of eyes. At the same time, it is also an important inducement to cause teenager myopia. If people's eyes look at nearby objects for a long time, the ciliary muscle has been in a highly "working" and concentrated contraction state without proper relaxation and adjustment within a certain time, the ciliary muscle may have spasm. In addition, it has not been relaxed at an appropriate time, which will affect the self-regulation of the ciliary muscle for a long time. The eyes of teenagers will have the problem of false myopia, and then gradually develop to true myopia, resulting in irreparable results, and most teenagers suffer from it. At the same time, eye center defocus is another important reason for the acceleration of myopia.

2.3 Other Factors

In addition to the above two causes, gender, age and eating habits are also important factors contributing to the increasing incidence rate of myopia in adolescents. If teenagers like to eat sweets or dietary bias is too serious, it will lead to the lack or imbalance of trace elements in the body, resulting in the occurrence of myopia. Studies have shown that if zinc and calcium is seriously deficient or reduced in a person's body, the prevalence of myopia is very high. Besides, teenagers are in the stage of physical growth and have strong plasticity. If they are affected by bad factors such as computer games, television and the environment for a long time, the ocular axis will grow excessively, which will also increase the incidence of myopia. Finally, they are affected by long-term bad habits. Reading while walking, reading with eyes in the strong sun, or incorrect reading posture, writing time process, etc., will also improve the incidence of myopia.

In addition, the difference of age and gender is also an uncontrollable factor affecting the prevalence of teenager myopia. The development of eyeball is the process of developing from farsightedness to squareness to aging with the growth of children. Early childhood is the process of children's development from farsightedness to squareness. If the growth of eye axis does not adapt, it will automatically adjust or terminate, which will lead to myopia. Therefore, the incidence rate of myopia in school age is also increasing year by year. However, adolescents at the age of 10-15 have no geographical differences, only gender differences. A large number of studies have proved that the prevalence of myopia among female adolescents is significantly higher than that of male. The reason is that female adolescent development is more anxious than male, and with the increase of age, female's outdoor interaction will gradually be less than that of male, however, a large number of outdoor activities have a certain inhibitory effect on the formation of myopia. Therefore, the incidence rate of myopia in men is much lower than that in women.

3. Prevention and Control of Teenager Myopia

The main means to control the prevalence of teenager myopia are as follows:

3.1 Reduce the Eye Intensity and Effectively Improve the Illuminance of the Eye Environment

We can take different methods and means to improve the light intensity environment around the eyes, make it meet the light requirements of the eyes, and form a good habit of using the eyes. When the eyes feel tired after using for a period of time, relax and adjust the eyes appropriately, so as to keep them in a comfortable state and reduce the incidence of myopia. Besides, in terms of schools, school leaders should pay attention to the improvement and innovation of school content and teaching facilities, provide a good learning environment and lighting environment for students, ensure that students can study in spacious and bright classrooms, and help students develop good

learning habits. In the process of transforming the lights in classrooms, the harm of Blu-ray to students' eyes should be reduced, and its color rendering index should be greater than 80, which meets the requirements of lighting and certification in classroom teaching of primary and secondary schools in GB7793. Meanwhile, teachers should pay attention to improving students' own eye protection consciousness, and guide students to strengthen the prevention and control of myopia by increasing eye exercises, reduce the incidence rate of myopia, and relieve the eye fatigue caused by excessive use of eyes by acupoint massage or traditional Chinese medicine application^[2]. Finally, in terms of families, parents should urge students to eat more vegetables and fruits containing vitamin B group, which has a good preventive effect on myopia. At the same time, they can select appropriate lighting equipment to assist students in learning, help children establish good learning habits and develop good learning sitting posture, so as to greatly prevent and control the occurrence of teenager myopia. It is conducive to the maintenance and improvement of teenagers' own vision level.

3.2 Wear Scientific Optical Lenses

As we all know, after teenager myopia, parents will take students to glasses stores that meet national standards for testing, and wear optical lenses that meet the current situation of teenager myopia to adjust their eye conditions, so as to facilitate the normal life and study of teenagers and control the further deterioration of myopia. In the choice of glasses, glasses are usually divided into frame glasses and corneal shaping glasses. After professional design and polishing of the lenses required by glasses through professional glasses grinding stone, teenagers wear hard corneal shaping glasses made of high oxygen permeable materials, and use the refractive power of corneal optical area to prevent and control low and medium myopia. Research shows that if teenagers wear glasses for 8-10 hours at night, the clarity of naked eye vision will be significantly improved after taking off the glasses the next day. In addition, eye surgery is also a common means to treat teenager myopia. It has the characteristics of significant effect and short time. At the same time, the relevant technologies of eye surgery are constantly improving, so as to provide better convenience and technical guarantee for the myopia problem of later adolescents^[3].

3.3 Develop Good Eating Habits and Behavior Habits

In the diet, we should eat more foods beneficial to the eyes to adjust, such as carrots and celery, which contain more xanthophyll. Besides, the pupils of all mammals, including humans, have a kind of self-regulation of self-stress. For example, in the face of the difference between day and night, the human pupil will be smaller during the day and larger at night. When teenager myopia occurs, pupil will have an adjustment of three linkage phenomena, including convergence and contraction of visual axis. Therefore, in order to ensure the visual clarity and recognition ability of teenagers, the workload of pupil at night is greater than that in the daytime, and it is closer to the object, pupil will also make reasonable adjustment to improve his visual ability as much as possible, which will not only increase visual burden, but also easily lead to myopia.

4. Conclusion

In short, in the prevention and control of teenager myopia, first of all, we should fully understand the main risk factors leading to teenager myopia, then make reasonable planning and adjustment in terms of learning habits and eating habits, formulate corresponding physical exercise and outdoor activities, enhance our physical strength and do a good job in eye maintenance. Adequate sleep and good living and learning habits are the key to prevent and control teenager myopia. In addition, schools, parents, students themselves and relevant public health departments should strengthen the control of surrounding environmental factors, provide a good visual environment for teenagers and avoid the impact of adverse factors as far as possible.

References

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