

Myopia rates in children on THE RISE

Is too much screen time the only reason?

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One day, when I was in the second grade, I was struggling to see the blackboard clearly in class. I moved from the back of the classroom to the middle, and finally to the front bench; yet, I struggled to decipher the squiggly lines written on the blackboard.

I was scared to tell my parents at first, fearing that my mother would give me a stern scolding as I had disregarded her advice to eat fish and vegetables regularly. Eventually, the severity of the fuzziness in my vision surpassed the fear of my mother's scolding and so, I told her.

My parents took me to the doctor afterwards and I have had prescription glasses ever since. Most kids who need spectacles have a somewhat similar experience of getting diagnosed with refractive errors, which is an evolving health concern among children in our country.

Myopia is the leading refractive error, especially in school-age children and teens. According to a study conducted by the Ispahani Islamia Eye Institute and Hospital (IIEIH) on 32,748 students from different schools, 40 percent of Dhaka's school children have some form of visual impairment. A great deal of them have myopia.

Refractive errors are a group of eye disorders where the eye focuses images either in front of or behind the retina. So, patients either have trouble seeing distant objects or ones up close or both.

Myopia is a refractive error where the focusing power of the lens or the whole eye alters in such a way that the image is formed in front of the retina instead of on the retina. It happens because of several reasons ranging from genetic and developmental anomalies to

malnutrition, exposure to too much artificial light, or even lack of exposure to enough sunlight.

A study titled "The Environmental and Social Risk Factors for Myopia in Children and Adolescents in Bangladesh" published in the journal *Scholars Journal of Applied Medical Sciences* shows significant associations between myopia and low outdoor activity. As seen in the study, older children had a greater frequency of myopia than younger ones. This trend may be attributed to a decline in older children's exposure to natural environments and a shift in how they use their free time.

The study further suggests that the frequency of exposure to sunshine is more significant than other factors in determining myopia onset. Kids who spent more time outside each week were less likely to develop myopia compared to those who spent more time indoors. Thus, children living in urban areas are highly susceptible to developing myopia. Sunlight retards the secretion of the hormone 'adenosine'. Lack of sunlight leads to unrestricted adenosine secretion which results in the eyeball increasing in length, causing myopia in children. Indoor lighting cannot substitute sunlight in this regard, as normal daylight brightness ranges around 1,00,000 lux, whereas a well-lit room will hover around 500 lux.

Healthcare providers have long warned about the detrimental effect of prolonged exposure to electronic displays. But exposure to daylight is a factor we are yet to consider from a public health awareness standpoint.

"In my practice, the number of children coming in with myopia and other refractive errors has gone up without a doubt," said Dr Md Asaduzzaman, a senior consultant on ophthalmology at the capital's

Mugda Medical College Hospital. "If we look for the reasons behind this uptick, well-known causes such as deficiency of vitamin A and too much screen time for preschool-age kids come to mind. But lack of playgrounds for children living in urban areas and primary and secondary schools lacking proper infrastructure for kids to spend some time outdoors are important contributing factors."

As to how we should best prepare ourselves to tackle this emerging issue, Dr Asaduzzaman said, "We should start at the school level. Yearly eye checkups should be introduced at schools. Classrooms and study materials should be developed in such a way that they put minimum strain on the eyes. Screen time for primary school-age children should be strictly controlled to one to two hours. Many a time, kids complain at home about hazy vision or headaches. Parents shrug it off thinking the child is inventing excuses to skip lessons. These matters shouldn't be overlooked. Parents should consult an ophthalmologist if the school doesn't ensure health checkups. Often, easy to cure refractive errors develop complications because of delays in receiving healthcare."

The World Health Organization (WHO) predicts that half of the world's population will be myopic by 2050. With the rates of myopia in school children on the rise, we cannot afford to be nearsighted on this issue. This has to be treated as a public health concern and steps have to be taken to address the problem accordingly.

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