

WHEN LIFE IS A BLUR

MYOPIA, ALSO KNOWN AS NEARSIGHTEDNESS, IS THE MOST COMMON CONDITION TO AFFECT HUMAN VISION. It means that close objects appear sharp, but distant objects become blurred. The condition occurs when the eyeball is too long or the cornea (the clear front cover of the eye) is too curved.

Myopia affects 85-90 per cent of adults in Asian cities. Unlike for children in Western populations, where the prevalence of myopia is very low (less than five per cent), prevalence in Asian children is as high as 28 per cent for six-year-olds. The Singapore Cohort Study of the Risk Factors of Myopia (SCORM) states that the prevalence of myopia (defined as less than 50 degrees) in Singapore children was 27.8 per cent at seven years old, 34.5 per cent at eight years old and 43.4 per cent at nine years old.

Childhood onset myopia typically occurs from age six and progresses until age 15. However, there is a worrying trend of earlier onset of myopia in children. Children born prematurely have a much higher risk of myopia, which can happen in the first year. Rare cases of inherited diseases of the retina and syndromes like Down syndrome are also associated with early childhood myopia. The earlier the onset and the faster the rate of progression, the more myopic the child becomes. In young children less than age seven there is a risk of lazy eye, especially if the difference in the degree between the two eyes is great. The visual system is still developing until the age of seven and anything that blurs the image (like uncorrected myopia) can lead to permanent loss of vision, known as amblyopia or "lazy eye".

In contrast, early adult onset starts between the ages 20 and 40 and does not progress much. In late adult onset myopia, the onset is after the age of 40. This is usually due to changes in the density of the lens, which can be a result of diabetes mellitus or age-related cataract development. In adults, there is no risk of amblyopia.

Evidence indicates that progressive childhood myopia is due to a combination of genetic and environmental factors. Studies have found that a child is more likely to develop myopia if he has one or both parents who suffer from myopia or is constantly involved in near work. Near work refers to visual activities performed at a close distance (within an arm's length). They include activities such as reading, writing, craftwork and playing with games on handheld devices such as mobile phones. Although children may need to spend time on these activities, it is important to limit continuous near work. Encourage children to take a break of three to five minutes after 30-40 minutes of near-work activities. They can look out of the window or go outdoors to relax their eyes. In addition, discourage near work like playing video games on small, handheld devices.

Emerging evidence suggests that spending more time outdoors may help delay the onset or progression of myopia. Sunlight causes the release of dopamine from the retina, which slows down eyeball elongation and hence myopia. Therefore children should be encouraged to engage in outdoor activities daily, like sports or simply having fun at the playground.

The earlier the onset of myopia, the higher the myopia becomes. The higher the degree of myopia, the higher the risks of developing complications which lead to reduced vision and blindness. The following complications can occur:

- Retinal detachment: a condition when the inner layer of the eye detaches from the eyeball.
- Cataracts (opaqueness of the lens): there is a higher chance of developing cataracts at an earlier age.
- Glaucoma: severe myopia can lead to increased fluid pressure in the eyeballs, resulting in glaucoma.
- Macular degeneration: this occurs when the retina degenerates, leading to reduced vision.

It should also be noted that myopia sometimes presents as one of the features in a wide variety of genetic disorders, including Stickler syndrome, Marfan syndrome, and chromosome abnormalities such as Down syndrome. ■



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