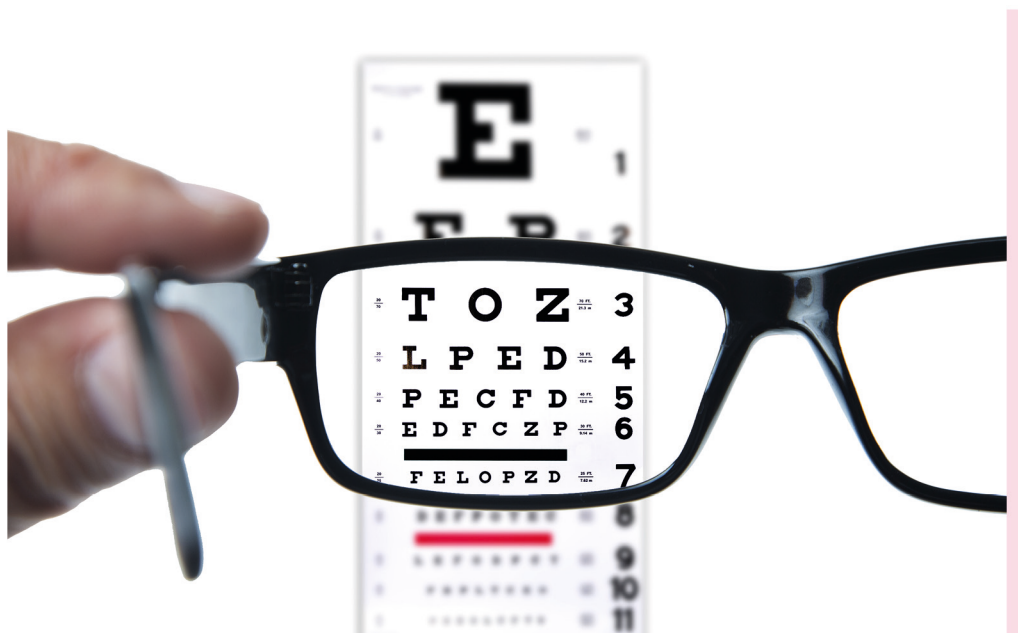


Acting on myopia

Myopia is the most common human eye disorder and is particularly common in Singapore. Learn how atropine drops may be helpful in arresting its progression.

By Dr Leo Seo Wei, Ophthalmologist



Near-sightedness, or myopia, is a common condition of the eyeball that causes close objects to be seen clearly, but objects farther away to appear blurred. Across Asia, the condition has reached epidemic proportions, with 85 to 90% of adults being myopic. Singapore is no exception, with the prevalence in Singapore children very high with almost three in 10 children myopic at age seven, and the rate rising to four in 10 by age nine. By the age of 18, 80% of youth are myopic.

Early correction

Early diagnosis is important so that the child's vision can be corrected with optical aids and more importantly, interventions can be used to slow down the progression of myopia. While childhood onset myopia typically occurs from age six and progresses till about age 15, there is the worrying trend of earlier onset of myopia in children. The earlier the onset of myopia, the higher the myopia becomes and this leads to higher risks of developing complications which lead to reduced vision and blindness. These include retinal detachment, cataracts, glaucoma and macular degeneration. In addition, there is a rare problem called myopic strabismus fixus where severe eye muscle imbalance causes restricted upward and outward movement of the eye.

The atropine approach

One approach to delay the progress of myopia is the use of atropine eyedrops. For a long time, atropine in 1% concentration has been used in ophthalmology to

attempt to arrest myopia. The drops relax the pupil and focus muscles of the eye, causing blurred vision and dilated pupils. The resultant light sensitivity and the need for bifocal/progressive additional lenses and photochromatic lenses have posed some barriers to the treatment's success. Several other studies also found that when the use of atropine stopped, the myopia 'rebounded', becoming worse.

However, in recent years, a lower concentration of atropine eyedrops has been used to stop the eyeball from growing longer, a hallmark of myopia. A Singapore study which began in 2006 studied 400 short-sighted children who were given daily eye drops with three different atropine concentrations for two years and subsequently tracked for five years. Results showed that side-effects were minimised for the most diluted eye drops, so children did not need sunglasses or bifocals. The 'rebound' effect was also more modulated and myopia progression was best controlled in those who received the atropine at 0.01% concentration. Overall, atropine 0.01% reduced myopia progression by 50 to 60 per cent, without the side effects.

Today, atropine 0.01% is commercially available and is the most promising treatment for progressive myopia in children. For children with rapidly progressive myopia and especially those with a family history of retinal detachment/retinal holes or high myopia, this is the most promising treatment to slow down the progression of myopia.



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