

IMI Onset and Progression of Myopia in Young Adults

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Whilst the onset and progression of myopia is usually seen in childhood, it can also occur in adulthood (aged 18 to 40 years). This paper explores the existing evidence around myopia onset, progression, risk factors and management of myopia in adulthood.

When does Juvenile-Onset Myopia Stabilize?

Data is scarce and there is a great deal of individual variation, but stabilization of juvenile-onset myopia typically occurs around the age of 15 years for around half of the myopic population. At age 18 years, around 77% are found to be stable and by 21 years, around 90% have been found to be stable.

How common is adult-onset myopia?

There are varying estimates of the proportion of myopia that is adult-onset, with frequencies in the literature ranging from 15 to 81%. Studies have also found that those with adult-onset myopia tend to have lower levels of myopia compared to those with childhood-onset myopia. The onset in adulthood is more commonly reported in college and university students in professional programs and in certain occupation groups with higher demand for near work. The prevalence of adult-onset myopia does not appear to have changed over time.

What is the rate of myopia progression in adults?

There are several reports documenting myopia progression in adults—largely evaluating university students in professional programs (e.g., medical students). Annual progression has been reported to vary from +0.02 to -0.23D in adults aged 18-25 years. From studies of older participants ages 25 to 40 years, the mean annual progression was generally lower and ranged from -0.03 to -0.18D although this data encompassed a broader population pool e.g., soft contact lens wearers. In all cases, myopia progression is due to axial elongation. The annual rate of myopia progression among adult students has remained stable for the past 35 years.

What are the risk factors for adult myopia onset and progression?

Risk factor data for adult myopia is scarce and sometimes conflicting but risk of onset and progression reduces with age, and the risk appears to be higher in university students/occupations who spend more time reading and on near tasks and less time outdoors. The rate of progression appears similar between Europeans and Asians.

What are the implications for patient care?

While there are modalities available for managing myopia in children, it is difficult to predict their effectiveness in adults as there are a lack of large clinical studies investigating myopia control in young adults. Studies in young adults are more difficult due to the lower rates of progression observed, requiring larger sample sizes and longer durations to observe meaningful effects. While kerato-refractive surgery can improve vision in people with myopia, it does not necessarily prevent long-term elongation. Thus, surgery in adults in early twenties may result in the re-emergence of myopia later in life, leading to reduced long-term satisfaction and a reassessment of the cost-effectiveness of the procedure.

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