

MYOPIA IN YOUNG SINGAPOREANS

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The development and progression of myopia is of great concern to young Singaporeans, particularly with Singapore's large Chinese population. The incidence of myopia among Chinese is higher than that of the other races. Indeed, Chinese and Japanese have one of the highest incidence of myopia. Why is this so?

In a population of myopes, the pattern of the severity of myopia follows a Gaussian curve with one end of very low myopia and the other extreme of some with very high myopia. Most of the population would fall within 2 extremes. Extreme degrees of myopia of over 10 Dioptres may develop degenerative changes leading to poor vision and blindness. A number of these cases run in families suggesting a strong hereditary influence. The vast majority of myopes falling within the 2 to 8 Dioptres refractive error do not demonstrate convincing hereditary trends. What then are the factors influencing the pattern of myopia in young Singaporeans? Papers have alleged the importance of constant close work affecting myopia and the association with intelligence and attainment of higher levels of

education. It is difficult to draw direct links between myopia and close work and between myopia and the ability to achieve tertiary education. Carpet weavers, seamstress and people involved in close work may not show a higher prevalence of myopia.

Again, the correlation between higher degrees of myopia and higher percentage of individual with tertiary education is a flimsy one. Young Singaporeans attain higher levels of education, more importantly because of socio-economic factors, opportunities and personal qualities like ambition, determination and perseverance.

There is no doubt that the influence on the pattern of myopia is multifactorial. Hereditary versus environmental influences have been hotly debated for decades. There is substantial evidence to suggest that hereditary factors are of great importance and that different severity of myopia can be passed on in generations. Environmental factors may influence an already predetermined genetic makeup. Socio-economic factors, constant near work and reading habits may be important in determining the degrees of myopia in early life. Documentary evidence has shown the importance of racial influence. Chinese and Japanese for example have higher incidence of myopia than most other races. Extensive research will be required to give us a better understanding of the factors influencing the development of myopia and perhaps a myopia controlling gene may sometime be identified.

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