

Letters to the editor

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Re: COVID-19, sweat, tears... and myopia?

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EDITOR: We thank Navel et al.¹ for their discussion of the possible association between the coronavirus disease 2019 (COVID-19) pandemic and myopia. Presently, COVID-19 is associated with substantial mortality and morbidity, putting strains on communities and health-care systems alike. Along with strict quarantine policies, the pandemic is causing schools to enter lockdown and child-care facilities to close. Quarantine policies have been implemented to reduce the intensity of transmission among children and teenagers. The COVID-19 pandemic may indirectly exacerbate the epidemic of myopia in children and adolescents. In short, we anticipate that the COVID-19 pandemic will likely affect the lifestyle of children – comprising learning style, rest, exercise, and diet – and may intensify the severity of risk factors for myopia.

Apart from issues relating to learning style as highlighted by Navel et al.,¹ other lifestyle factors such as diet, sleep and psychological health may also be related to myopia and

therefore impacted by the COVID-19 pandemic. Although there is no conclusive evidence of a particular diet influencing the development of myopia, the association between diet and myopia is a rising concern. In Hong Kong, myopic children are more likely to report lower protein and fat intake,² which contrasts with a higher protein intake among myopic children in mainland China.³ The epidemic has limited the opportunities for people to eat out or collect foodstuffs, which can cause imbalances in the types of food consumed and in nutrition intake. We anticipate that many children will experience an unbalanced diet during the pandemic response.

Furthermore, children may be subjected to irregular daily scheduling of activities, caused by the absence of school constraints, and may result in children staying up later than normal or developing other sleep disorders. In Korean adolescents, the risk for myopia decreased by 10 per cent per hour increase in sleep, and the refractive error increased by 0.10 D per hour increase in sleep, with a dose–response pattern.⁴

Notably, there are significant differences in the psychological health of Chinese adolescents with myopia compared to those with emmetropia, with a close association between anxiety and myopia.⁵ In order to reduce adverse psychological effects on the development of myopia, concern should be placed on mental health issues in teenagers, such as loneliness or stress, which may be exacerbated by the pandemic crisis.⁶

Last but not least, people are less likely to visit doctors for consultation on eye health during the COVID-19 pandemic. Children and adolescents should be receiving regular comprehensive eye health examinations, especially with respect to refractive status.⁷ Some countries or regions are providing tele-consultation or e-health as alternatives,⁸

which help to maintain the doctor-patient relationship and educate families on eye care. Despite this, doctors cannot perform ocular examinations or evaluations of refractive status for children or adolescents via tele-consultation. Nonetheless, children, adolescents and their parents can still obtain useful eye-care information from doctors and work to control the development or progression of myopia and other paediatric eye diseases. Although some strategies for preventing myopia have been announced in China, eye-care practitioners should establish evidence-based guidelines to cope with COVID-19 pandemic-related myopia in children and adolescents.

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