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LETTER

The Distribution and Influence Factors of Non-Invasive Tear Film Break-Up Time in Children [Letter]

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Dear editor

I recently read the insightful article entitled "The Distribution and Influence Factors of Non-Invasive Tear Film Break-up Time in Children", published by Zhao et al in your esteemed journal.[1]

I would like to congratulate the authors for their comprehensive approach to understand the complexities of the pediatric ocular surface, offering valuable insights into how refractive errors may influence tear film stability in children that is often overshadowed by its adult counterpart, dry eye disease.

However, I would like to raise a few points for further consideration in the context of this important work:

The article highlights the Distribution of Non-Invasive Tear Film Break-Up Time characteristics in myopic children and a direct comparison between myopic and non-myopic children provides additional context for the findings but it would be beneficial to explore further how Emmetropia, Hyperopia and astigmatism contributes to ocular surface instability, compared to myopia, could help refine diagnostic and treatment strategies for pediatric populations. It would be interesting to further investigate how different types of myopia correction—such as glasses, contact lenses, or even orthokeratology—affect TBUT.[2]

The article could benefit from a detailed exploration of modern lifestyle factors, particularly the increasing use of digital screens among children. As research continues to link prolonged screen time to reduced blink rates and increased tear evaporation, it would be valuable to consider how these factors might exacerbate or influence the tear breakup time in myopic children. Incorporating this factor could help identify children at greater risk of developing dry eye symptoms and direct preventive measures.[3,4]

While the article provides useful cross-sectional data on TBUT in myopic children but the TBUT findings has not been compared in terms of severity of myopia. I believe a longitudinal approach would be beneficial to better understand the long-term relationship between myopia progressions and tear film stability. It would be interesting to study whether children with more severe or rapidly progressing myopia experience greater instability in their tear films over time, and how early intervention might mitigate these effects.[5]

As the article highlights, children with myopia may be more prone to ocular surface instability, and assessing tear breakup time is a useful method for evaluating this. The findings of reduced TBUT in myopic children provide a crucial foundation for further research into the potential connection between refractive errors and dry eye symptoms in children. It is crucial as myopia is increasingly common among children globally, and understanding how it may affect the ocular surface could have significant clinical implications.

Thank you for publishing this important work, and for continuing to highlight emerging areas of pediatric eye care.

Disclosure

The authors report no conflicts of interest in this communication.

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References

1. Zhao GH, Wang JD, Liu MR, et al. The distribution and influence factors of non-invasive tear film break-up time in children. *Clin Ophthalmol*. 2024;18:2697–2704. doi:10.2147/OPTH.S475970
2. Chidi-Egboka NC, Briggs NE, Jalbert I, et al. The ocular surface in children: a review of current knowledge and meta-analysis of tear film stability and tear secretion in children. *Ocul Surf*. 2019;17(1):28–39. doi:10.1016/j.jtos.2018.09.006
3. Golebiowski B, Long J, Harrison K, et al. Smartphone use and effects on tear film, blinking and binocular vision. *Curr Eye Res*. 2020;45 (4):428–434. doi:10.1080/02713683.2019.1663542
4. Wang MTM, Muntz A, Mamidi B, et al. Modifiable lifestyle risk factors for dry eye disease. *Cont Lens Anterior Eye*. 2021;44(6):101409. doi:10.1016/j.clae.2021.01.004
5. Zhang Y, Chen Y. Influence of overnight orthokeratology on tear film and meibomian glands in myopic children: a prospective study. *BMC Ophthalmol*. 2023;23(1). doi:10.1186/s12886-023-02883-8

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