

## SIGNIFICANCES OF DAILY DISPOSABLE CONTACT LENSES DURING COVID-19

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Received: 20 Sep, 2021

Accepted: 10 Nov, 2021

Published: 25 Dec, 2021

**Key words:** Contact lenses; COVID-19; Daily disposable; Dryness; Surface deposits.

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DOI: <https://doi.org/10.54530/jcmc.535>

### Citation

Bhattarai S. Significances of daily disposable contact lenses during COVID-19. Journal of Chitwan Medical College. 2021;11(38):137-8.



Peer Reviewed

### ABSTRACT

Contact lens is one of the preferred modes of refractive correction for children and adults. With proper care and maintenance, even during pandemic of COVID-19, contact lenses can be prescribed and worn by the patients without much fear of Coronavirus infection. Till now there is no strong clinical evidence that proves contact lenses are not safe to wear during COVID-19. But considering patient's health and hygiene, various literatures have suggested that with compared to conventional or yearly disposable contact lenses, daily disposable contact lenses are safer to use during COVID-19. Since the daily disposable lenses are discarded daily after use at the end of the day, there is no need of extra care regarding manual cleaning and maintenance. Daily disposable lenses may have a very less or even no deposits and debris so makes patient more comfortable all over the time with less risk of Coronavirus infection.

### INTRODUCTION

Nowadays contact lenses are worn by more than 140 million people worldwide and it is a very effective and safe way to correct refractive errors.<sup>1,2</sup> It is a thin clear disc of plastic lens that floats on the surface of eye to optically correct myopia, aphakia, hypermetropia and astigmatism. <sup>1</sup>Daily disposable lenses are those lenses which are used once and when they are removed from eyes in the night are thrown away in the trash. Eye care practitioners can prescribe contact lenses without much fear of corona virus infection. There are enough evidences to suggest that contact lenses especially daily disposable lenses are safe to wear during COVID-19 times.<sup>2</sup>

**Why to use contact lenses even during COVID-19?** There are specific ocular disorders that require contact lenses instead of spectacles. These include anisometropia, unilateral aphakia, high myopia, keratocorns and irregular astigmatism. Besides optical indications, it can be used as therapeutic in case of bandage contact lenses, drug delivery system and for cosmetic purpose as soft color contact lenses. With compared to spectacles, contact lenses can correct higher refractive errors without the problems of thick and heavy glasses. Similarly, field of vision is larger and its use is not affected by rain, fog and

sweat. With use of contact lenses, magnification induced is within the limits of fusional tolerance for proper binocularity of eyes and vision.<sup>2,1</sup>

### **Risk factors associated with conventional or yearly disposable (reusable) contact lenses during COVID-19:**

Conventional contact lenses include those lenses which are discarded after use of one year or six month or three months depending on the modality and materials of the lens. So everyday these lenses should be manually cleaned daily using various contact lens solutions. So there might be a chance of cross contamination and infection from hands and fingers of the users during cleaning and disinfecting processes.<sup>3</sup> Daily wear conventional contact lenses may contain several deposits and debris that might cause eye irritation and the users frequently rub the eyes, touch the mouth with hands which can bring any type of virus to the body itself.<sup>3,6</sup> In case of reusable lenses, users has to place contact lenses at lens kit at the end of day after cleaning procedures and soak it overnight with solution. So not only the contact lenses, but users also have to take care of the lens kit or case for storing contact lenses which can be a source of coronavirus due to more contact time with lens kit and even lenses. In reusable lenses, surface deposits might cause giant papillary conjunctivitis, microbial keratitis, corneal infiltrative

events, and other red eye reactions. So, users usually rub the eyes and adnexa frequently to relieve the symptoms which might induce the suspected coronavirus to the eyes<sup>6</sup>

**Daily disposable contact lenses and COVID-19:** Recent literatures have suggested that with compared to conventional or yearly disposable contact lenses, daily disposable lenses are safer during COVID-19.<sup>4,7</sup> So all the contact lens users should be motivated to use disposable lenses taken every day from a sterile package and which are discarded at the end of the wear in evening to minimize the risk of Coronavirus contamination. Such lenses can be more hygienic than conventional wear design because lens is always placed directly on the eye fresh from a blister pack solution such that leaching agents in the lens are optimal.<sup>5</sup> Daily disposable are less likely to dehydrate and may render them more deposit resistant and comfortable for the wearer.<sup>4</sup> These lenses are made from novel materials including higher water content with gradient technologies and designs which could enhance their wearing comfort with less prone to deposits. Since lenses are packaged in individual blister packs in an unpreserved solution, solution sensitivity is far reduced. There is reduction in surface deposit related complications with consistent quality of vision due to minimal lens discoloration and spoilage.<sup>8</sup> Therefore wearer touches

their eyes and nose very less frequently than conventional or reusable wearers which might minimize the risk of novel Coronavirus infection. A study comparing different types of contact lenses found that daily disposable option cause less damage to ocular surface and less increase of proinflammatory cytokines as compared with reusable options so is able to exhibit minimal alterations to ocular physiology.<sup>9</sup> Since the daily disposable lenses eliminate the need for manual cleaning and disinfecting everyday, it reduces the chance of cross contamination from the microbes.<sup>10,12</sup> Many people might be sensitive to chemicals in their contact lens care products and lens kit and even a solution bottle may a source of infection everyday if not cleaned properly. So due to these clinical scenarios, daily disposable contact lenses could be the best wearing options for contact lens users during pandemic of COVID-19.<sup>11,13</sup>

## CONCLUSION

Contact lenses which are one of the preferred modes of vision correction are not an exception to COVID-19 infection. Daily disposable lens options should be motivated for all contact lens users due to very less chance of infection and other surface deposit related complications during COVID-19 pandemic.

## REFERENCES:

1. Denniston AKO, Murray PI. Contact Lenses: outline. In: Oxford Handbook of Ophthalmology. Third edition. New York: Oxford University Press; 2014.P.218-19. [\[LINK\]](#)
2. Michaud L. Does wearing contact lenses put you at greater risk of getting COVID-19? THE CONVERSATION. Google (Online June 18, 2020). Available from: <https://theconversation.com/does-wearing-contact-lenses-put-you-at-greater-risk-of-getting-covid-19-140242> [\[LINK\]](#)
3. Estopa MV,Wolffsohn JS, Beukes E, Trott M, Smith L, Allen PM. Soft contact lens wearers' compliance during the COVID-19 pandemic. Cont Lens Anterior Eye. 2021; 44:101359. [\[DOI\]](#)
4. Nick J, Schwarz S, Jarvinen S, Chalmers I, Kunnen C. Performance of Daily Disposable Contact Lenses in Symptomatic Wearers. J Cont Lens Res Sci. 2020; 4(1): e1-e11. [\[LINK\]](#)
5. CDC guidelines for contact lens wear during COVID 19. Last accessed on 2020 Jun 24. [\[LINK\]](#)
6. Jones L, Walsh K, Wilcox M, Morgan P, Nichols J. The Covid 19 pandemic: Important considerations for contact lens practitioners. Cont Lens Anterior Eye.2020 June; 43(3):196 203. [\[DOI\]](#)
7. Cho P, Boost MV. Daily disposable lenses: the better alternative. Cont Lens Anterior Eye. 2013;36(1): 4-12. [\[DOI\]](#)
8. Curran SH, ChrisHunt MS, Young G. The use of daily disposable lenses in problematic reusable contact lens wearers. Cont Lens Anterior Eye.2014; 37(4): 285-91. [\[DOI\]](#)
9. Kwan J. Daily disposable contact lenses cause less damage to ocular surface. A Perspective. Online on April 18, 2019. [\[LINK\]](#)
10. Efron N, Morgan PB, Woods CA. An international survey of daily disposable contact lens prescribing. Clin Exp Optom. 2013;96(1):58-64. [\[DOI\]](#)
11. Efron N,Morgan PB,Helland Magne, Itoi M,Jones D,Nichols JJ et al. Daily disposable contact lens prescribing around the world. Cont Lens Anterior Eye.2010; 33(5):227-7. [\[DOI\]](#)
12. Walline JJ, Long S, Zadnik K. Daily Disposable Contact Lens wear in Myopic Children. Optom Vis Sci. 2014; 81(4): 255-9. [\[DOI\]](#)
13. Woods J, Jones D, Jones L, Jones S, Hunt C, Chamberlain P et al. Ocular health of children wearing daily disposable contact lens over a 6 year period. Cont Lens Anterior Eye.2021;44(4):101391. [\[DOI\]](#)