

Letter to Editor: N95 Mask Compliance during the COVID-19 Pandemic

Dear Editor,

One of the most important measures advocated for the prevention of transmission of the coronavirus disease 2019 (COVID-19) infection is the use of a face mask.^[1] However, this measure will not be useful if the compliance of the population is not good. The protection offered by the masks does not depend only on the type of mask but more importantly on how correctly the mask is used. The best and most efficient masks are the N95 and KF94 HEPA masks; however, they are uncomfortable to wear, need to be tightly fit to the face, and are costly. Comparatively, surgical masks are more comfortable and have long been proven to be effective; however, the loose-fitting leads to possible leakage of aerosols. Cotton masks are much more comfortable but their efficacy is the least.^[2]

The compliance of using these face masks has been a cause of concern for many users. The N95 masks lead to increased resistance to airflow and buildup of heat under the mask. This can lead to frequent touching and removal of the mask, which can eventually lead to an increased risk of infection. This effect is more pronounced in hot and humid conditions where the condensed moisture on the outer surface of the mask leads to increased heat entrapment inside the mask.^[3] Besides, there is increased CO₂ builds up under the mask which can increase the discomfort consequently reducing the compliance.^[4] Scarano *et al.*^[3] conducted infrared thermal evaluation of the face after wearing surgical and N95 masks and found that even 1-h use of face mask led to an increase in the facial skin temperature under the mask, which decreased rapidly when the mask was removed. They also recorded a higher number of temporary removals of N95 masks as compared to surgical masks.

There are certain measures that we can take to increase compliance such as the use of exhalation valves, cup-shaped or duckbill designs, and reduction of the dead space in the masks themselves. Besides N95 mask may be reserved for high-risk exposures such as aerosol-generating procedures or while examining the nasal or oral cavities for taking swabs. In lesser exposure areas, surgical masks with or without face shields may be used. Another possible solution is to have designated areas in the hospital for doffing of face masks to provide a face mask “vacation” so that the thermal stress can be reduced.

The N95 mask is useful for the prevention of transmission of the COVID-19 infection; however, their use is limited by the reduced compliance. Judicious use of the appropriate mask will help increase compliance and all health-care workers should be made aware of the possible solutions for increasing the same.

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Conflicts of interest

There are no conflicts of interest.

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