

Ramkumar: Considering face coverings, safety and children

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With the new academic year just started in the United States, what type of face masks are needed?

There is debate and discussion going on regarding the use of face masks for school children who cannot be vaccinated yet and the necessity of these masks as an important countermeasure.

Ongoing research in our laboratory has shown that layered masks are better compared with single-layer masks. As comfort is a factor, in addition to filtration, next-to-skin comfort can be provided using a cotton layer and additional layers can be used to enhance filtration. While N95 masks are the gold standard, 3-ply face masks can provide filtration of small particles with a filtration efficiency in the range of 80-90 percent, proving multilayered masks are needed.

Dr. Harvinder Gill, a vaccine researcher and professor of chemical engineering at Texas Tech University said, "PPEs are the first line of safety for researchers working for treatments and cures against infectious diseases and for the frontline responder working during times of crisis to help the affected people."

He added, "While vaccination can protect people, the virus can still infect the vaccinated folks, and without them even knowing could be the carriers of virus in the community. By wearing face masks, this vicious cycle of transmission can be stopped, and the pandemic can see its end."



Ramkumar

Since July, there has been a sharp rise of COVID-19 cases due to the emergent Delta variant, which has genuinely heightened the need for vaccinations and other protective measures. On July 27, the U.S. Centers for Disease Control and Prevention has recommended the use of face masks in indoor public settings, as this variant has been found to be more contagious.

Face masks have shown to reduce the transmission and with the unavailability of vaccines for children under the age of 12, with schools resuming in person teaching after one full year, parents are genuinely concerned about safety. Even with the full approval of one COVID-19 vaccine Aug. 23, it is unlikely that vaccines will be available for kids below the age of 12 by the end of this year. This view was expressed by Dr. Francis Collins, Director of the U.S. National Institutes of Health in a recent radio interview.



Dr. Srinivasan Narasimhan, managing director of Chennai-based Asthagiri Herbal Research Foundation, who carried out research under Nobel laureate Herbert Brown said, “In countries where vaccines are not yet available for large population, and in those regions where population density is high, other countermeasures such as face masks are needed.” He added, “With schools resuming in person tutoring from this Fall, it is important to consider safety measures like wearing face masks and practicing hygiene.” His organization is working on natural herbs based antimicrobial formulations for impregnating cotton and other materials.

Face masks that have multiple layers are needed, which will serve as barrier to the transmission of microbes. Commercially available masks have two to four layers made using knitted and woven fabric structures. Further research is needed to determine the material type, construction details of masks and comfort factors that will lead to greater acceptability of PPEs in the future.

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