

Health Shield Fact Sheet

- A study in 2015 found that 97% of particles penetrated cloth face masks, and 44% of particles penetrated traditional medical-grade face masks¹.
- A study found that face shields blocked 96% of respiratory droplets at a distance of 18”².
- In another study, at a distance of 20”, no simulated aerosols were found on the mucosal surfaces of the nose and mouth when wearing a face shield. This is in contrast to surgical masks, which had a significant number of simulated aerosols on the mucosal surfaces of the nose and mouth³.
- Recently, of healthcare workers with standard personal protective equipment (PPE) who visited >5000 homes with COVID-19 positive patients, 222 later tested positive for COVID-19. Those healthcare workers with face shields visited >18000 homes, and 0 tested positive for COVID-19⁴.
- Many experts are promoting the use of face shields over masks to help curb the spread of COVID-19⁵.
- A systematic review showed that cloth and paper face masks did not decrease transmission of influenza, possibly due to cross-contamination of wearers touching their faces⁶.
- There is concern that masks and gloves may provide a false sense of security and promote self-inoculation via cross-contamination by touching the face^{7,8}.
- People touch their faces, on average, 15-23 times per hour^{9,10}.
- Physicians and healthcare staff well-versed in the importance of not touching their faces do so with similar frequency¹¹.
- Masks also collect moisture with prolonged wearing and may even promote transmission of the novel coronavirus¹².
- A study testing adherence in schools to face mask use during a possible pandemic found 15% of students wore masks after 2 weeks, and over half of teachers found face masks to be moderately or severely disruptive¹³.

¹MacIntyre, C. R., Seale, H., Dung, T. C., Hien, N. T., Nga, P. T., Chughtai, A. A., ... & Wang, Q. (2015). A cluster randomised trial of cloth masks compared with medical masks in healthcare workers. *BMJ open*, 5(4), e006577.

²Lindsley, W. G., Noti, J. D., Blachere, F. M., Szalajda, J. V., & Beezhold, D. H. (2014). Efficacy of face shields against cough aerosol droplets from a cough simulator. *Journal of occupational and environmental hygiene*, 11(8), 509-518.

³Shoham, S., Acuna-Villaorduna, C., Cotton, M., Hardwick, M. (2020). Comparison of Protection against Ocular Contamination & with Disposable Eyewear Products.

⁴Bhaskar, E. M., Arun, S. (2020). SARS-CoV-2 Infection Among Community Health Workers in India Before and After Use of Face Shields. *JAMA*. doi:10.1001/jama.2020.15586.

⁵Perencevich, E. N., Diekema, D. J., & Edmond, M. B. (2020). Moving personal protective equipment into the community: face shields and containment of COVID-19. *JAMA*.

⁶Xiao, J., Shiu, E. Y., Gao, H., Wong, J. Y., Fong, M. W., Ryu, S., & Cowling, B. J. (2020). Nonpharmaceutical measures for pandemic influenza in nonhealthcare settings—personal protective and environmental measures. *Emerging infectious diseases*, 26(5), 967.

⁷Yadav, D. K., Shah, P. K., Shah, S. P., & Yadav, A. K. (2020). The Use of Disposable Gloves by General Public During COVID-19 Increases the Risk of

Cross-Contamination. *Asia Pacific Journal of Public Health*, 1010539520932704.

⁸Lazzarino, A. I., Steptoe, A., Hamer, M., & Michie, S. (2020). Covid-19: Important potential side effects of wearing face masks that we should bear in mind. *The BMJ*, 369.

⁹Nicas M, Bestadh D. A study quantifying the hand-to-face contact rate and its potential application to predicting respiratory tract infection. *J Occup Environ Hyg*. 2008;5(6):347–52.

¹⁰Kwok YLA, Gralton J, McLaws ML. Face touching: A frequent habit that has implications for hand hygiene. *Am J Infect Control* [Internet]. 2015;43(2):112–4. Available from: <http://dx.doi.org/10.1016/j.ajic.2014.10.015>

¹¹Elder, N. C., Sawyer, W., Pallerla, H., Khaja, S., & Blacker, M. (2014). Hand hygiene and face touching in family medicine offices: a Cincinnati Area Research and Improvement Group (CARInG) network study. *The Journal of the American Board of Family Medicine*, 27(3), 339-346.

¹²Perski, O., Simons, D., West, R., & Michie, S. (2020). Face masks to prevent community transmission of viral respiratory infections: A rapid evidence review using Bayesian analysis. *Qeios*.

¹³Allison, M. A., Guest-Warnick, G., Nelson, D., Pavia, A. T., Srivastava, R., Gesteland, P. H., ... & Byington, C. L. (2010). Feasibility of elementary school children’s use of hand gel and facemasks during influenza season. *Influenza and other respiratory viruses*, 4(4), 223-229.

